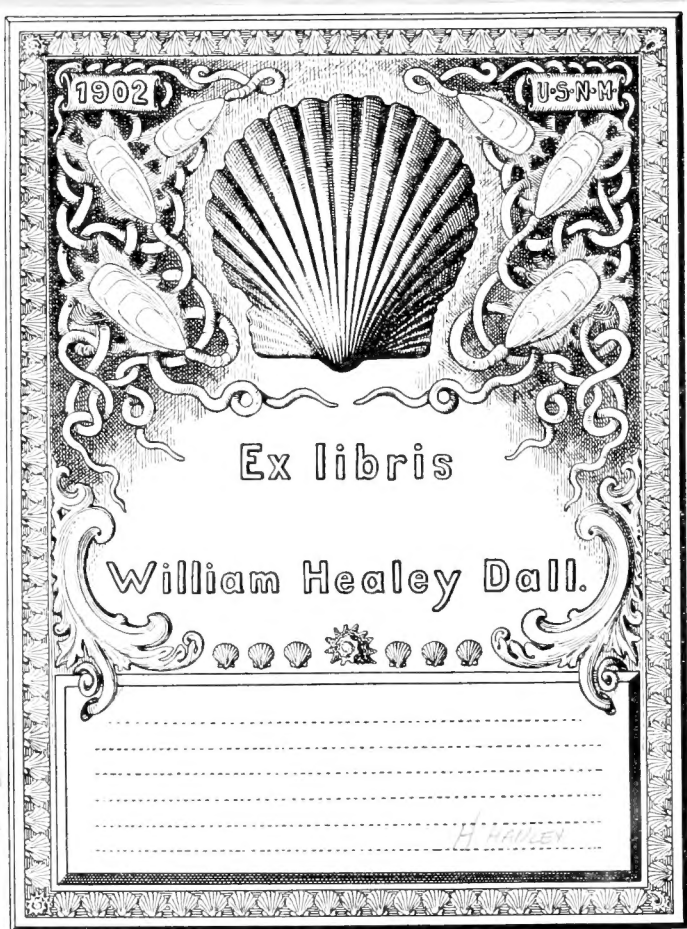


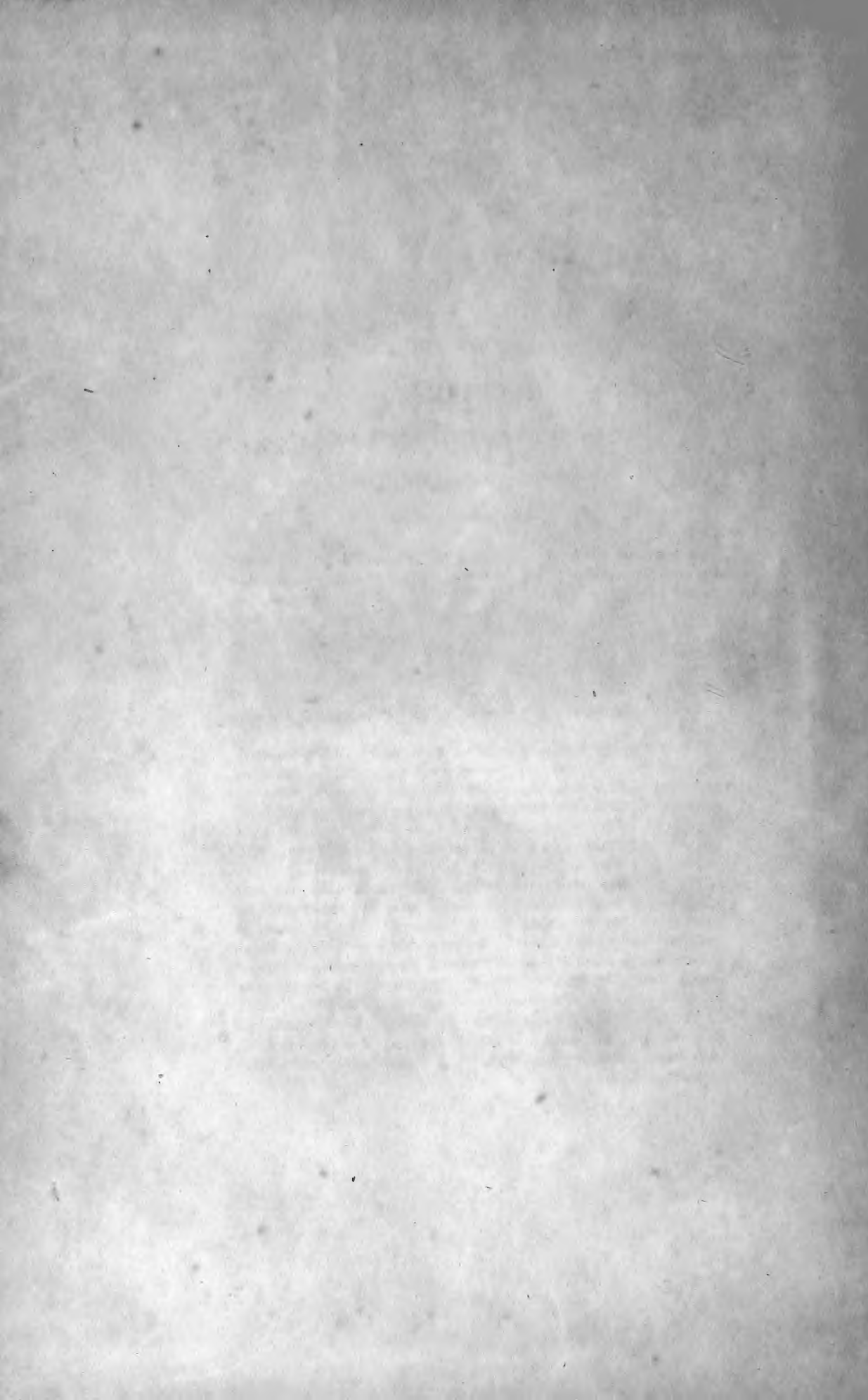
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Division of Mollusks
Section of Testes



MONOGRAPH OF THE FAMILY

NUCULIDÆ,

FORMING THE LAMARCKIAN GENUS NUCULA.

By SYLVANUS HANLEY, F.L.S., ETC.

1860-

Division of Mollusks
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THE essential ideal of a Lamarckian *Nucula*—I do not mean the genus according to the precise definition of Lamarck, for that would scarcely include even the few shells he has indicated, but *Nucula* so extended as to comprehend all the species which that author, when he finally elaborated his system, would have linked together, had he known them—is a bivalve hinged by a series of comb-like teeth. Thus simply characterized, its members form an easily recognizable assemblage, which, however, the exigence of modern classification compels us to subdivide as naturally as may be.

The empirical school of conchologists, which prefers the arbitrary selection of a strongly characterized type, and the grouping around it of such shells as resemble it in general aspect, to a strict generic definition (in default of which a species may be adjudged, even by an adept, to more groups than one), has distributed the pristine *Nuculæ* into six genera or subgenera (*Nucula* proper, *Leda*, *Yoldia*, *Portlandia*, *Solenella*, *Neilo*), placed far apart by D'Orbigny, and certain other naturalists, in different families. Without arrogating to myself the skill to decide upon the rank, position, and value of these sections, I have preferred to follow the more moderate views of Woodward, because, while nothing is easier than to discriminate between a nacreous *Nucula* proper, a porcellaneous *Leda* without a prominent ligament, and a porcellaneous *Solenella* with one, no adequate and universal characters by which all the *Yoldiæ* and *Portlandiæ* may be indisputably distinguished from all the *Ledæ* have ever been indicated. The published definitions are either inapplicable to all, or would comprehend several undoubted *Ledæ*.

B



H

LEDA, *Schumacher*.

Gen. Char. More or less elongated, usually peaked behind, almost always clothed with an epidermis, not nacreous within; margin never crenated. Teeth pectinated, on both sides of an internal cartilage. Pallial line sinuated.

Sect. I. LEDA, proper.—Often strong, usually with an umbonal ridge and concentric sculpture, only gaping at the posterior tip, sometimes without an epidermis, which, if present, is more often unpolished. Both dorsal areas usually impressed or defined, almost always sculptured. Pallial sinus small or moderate.—The four final species (especially the last two), *Nicobarica*, *serotina*, *lepidula*, and *tenella*, are intermediate in character between this and the next section.

Sect. II. YOLDIA, *Möller*.—Gaping at both ends, rarely with an umbonal ridge, usually fragile, usually with an epidermis, if so always a polished one (except, perhaps, in *Thraciaformis*), never ribbed, nor radiatingly sculptured. Dorsal areas rarely, if ever, sculptured, their lips usually pouting; front dorsal area rarely impressed or defined. Cartilage-pit usually large, cochleariform, or broadly triangular, shelvingly projecting inwards. Pallial sinus usually large.

Sect. III. PORTLANDIA, *Mörch*.—Resembling the last, but closed at both ends.

Sect. I. LEDA, proper.

1. L. ELONGATA, *Sowb.*, f. 39.—T. cymbæformis, utrinque hians et obversè subcuneiformis, æquilateralis, compressa, semipellucida, striis pertenuibus et anticè remotioribus longitudinaliter scalpta, posticè lævigata, cute nitidâ tenuissimâ fulvâ vel olivaceo-cinercâ induta. Extremitas antica aliquantulum latior, magisque rotundata; postica subbiangulata. Margo dorsalis horizontalis; ventralis in medio rectiusculus vel subretusus, utrinque convexiter acclivis.—Boat-shaped, thin, semitransparent, more or less compressed, gaping at both ends (more so in front), white under an excessively thin epidermis, which in aged examples is olivaceous ash-coloured, but in less matured ones is shining, bright fulvous, and only conspicuous near the margins; posteriorly smooth, elsewhere scratched lengthways with shelving striæ, which are so fine above as to appear obsolete, are close, fine, and regular in the middle, more remote and concentric in front. No umbonal ridge, but an indistinct shallow indented ray in front. Sides equal, or very

nearly so, obversely subcuneiform, almost similar, but the front one is slightly the broader and more rounded, the hinder slightly the more tapering, and subbiangulated at its extremity. Dorsal edge horizontal, very slightly flexuous (plano-convex in front, plano-retuse behind). Ventral margin subarcuated, the arch usually a little straightened or even subretuse in the middle, convexly rising at both ends, yet with a slight retusion in front, and in a straightened line behind. Beaks not at all elevated. Dorsal areas inconspicuous, the hinder one flattened. Teeth most numerous on both sides; pit shallow, broadly triangular, sunken.

2. *L. SOWERBIANA*, *D'Orb.*, f. 33.—*T. L. elongata* simillima, sed nivea, angustior, utrinque acutior, et fere usque ad extremitatem posticam scalpta striis arctioribus, quarum anticæ et concentricæ sunt etiamque obliquè longitudinales. Areae dorsales transversim costulatae.—Iridescent, snow-white, most closely resembling *elongata*, yet rather narrower, and with more taper extremities. The striæ, also, which are still finer and closer, and just in front are both concentric and obliquely longitudinal, extend as far as the ordinary site of an umbonal ridge. Dorsal areas more or less distinctly cross-barred. In adult examples the fine central striæ (at least in one of the valves) seem raised, and the lines of growth cut the somewhat slanting longitudinal ones before the smooth site of an umbonal ridge. In the young the escutcheon is excavated, and its edges crenulated: the hinder extremity of the valves, moreover (as may be seen in the nuclear portion of the full-grown shell), is, also, subobliquely striolate. *D'Orbigny*, aware that the South American *lanceolata* of Sowerby was not identical with the Lamarckian one (a species without adequate definition, either verbal or pictorial), termed it (*Voy. Amér. Mérid. Moll.*, p. 544) *Sowerbyana*, but with his usual carelessness referred to the figure in the 'Genera' (*electa*), instead of that in the 'Illustrations.'

3. *L. PATAGONICA*, *D'Orbigny*, f. 49, 40.—*T. angustè oblongo-rostrata*, compressa, albida, æquilateralis, undique longitudinaliter striata; striæ anticæ remotiores. Extremitas rostri attenuati recurvata, subobliquè truncata. Margo dorsalis anticus rectiusculus, vix declivis; posticus valde incurvatus, paululum declivis. Area magna excavata, carinâ plicæ umbonalis simplici circumscripta.—Of a much-produced beaked-oblong shape, rather thin, compressed, whitish, with a very shallow radiating indentation anteriorly, before which the close-set shelving subconcentric striæ that elsewhere traverse the entire surface become more distant,

5/ (? 51-2)

and are cross-hatched, as it were, by true concentric ones. Sides equal, or very nearly so. The front extremity bluntly rounded; the beaked hinder side gradually attenuated to a very narrow, rather oblique, truncated, recurved tip. Front dorsal edge straightish, nearly horizontal; hinder dorsal slope slight, much incurved. Ventral margin arched in front, much and convexly rising behind, neither retuse in front nor centrally. Escutcheon excavated, large, carinately defined by the projecting, nearly simple (*i. e.* not distinctly crenulated) edge of the umbonal ridge, which latter is planulate, and inconspicuous. Lunule narrow, not well defined. Cartilage-pit broadly triangular. Teeth very numerous on both sides.

4. *L. TELLINOIDES*, *Sowerby*, f. 36.—*T. lanceolato-elliptica*, anticè rotundato-acuminata, flexuosa, subæquilateralis, nivea, compressa, nisi posticè undique striata: striæ anticæ longitudinales; mediæ obliquè curvatæ. Margo dorsalis uterque vix declivis, anticus plano-convexus, posticus vix retusus. Areæ dorsales inconspicuæ.—Elongated, lanceolated-elliptic, slightly flexuous, bending down a little in front, and inclining upwards a little behind; thin, glossy, snow-white, compressed; smooth behind, elsewhere striated: striæ curved and slanting in the middle, almost concentric in front. Sides very nearly equal, gradually and nearly equally tapering to either extremity; anterior end rotundately peaked; posterior end angular above, rounded below. Dorsal slopes very slight; the front one plano-convex, the hinder one barely subretuse. Ventral margin subarcuated throughout, with an extremely slight anterior, and no posterior, retusion. Dorsal areas inconspicuous; the hinder one impressed, its edges minutely crenulated. Teeth very numerous on both sides.—Besides the longitudinal striæ, a few symmetrical lines of growth may be discerned beneath the front dorsal edge, and a few still more indistinct ones (but no striæ) on the opposite side. In mature examples similar lines are likewise manifest in the middle, near the lower margin.

5. *L. GLORIOSA*, *A. Adams*, f. 42, 43.—*T. angustè lanceolata*, nivea, in medio tantùm infernè compressa, ante radium impressum anticum plicis planulatis latis, et pone eum striis inclinatibus, concentricè sculpta; posticè multùm longior, obtuse acuminata, incurvatione utriusque marginis coarctata. Margo dorsalis anticus plano-convexus vix declivis; ventralis anticè arcuatus.—Elongated lanceolate, snow-white, shining, gaping at both ends (especially below anteriorly), convex or subventricose, retusely compressed below in the middle, with an indented ray in front;

the ordinary site of an umbonal ridge not elevated, but convex and smooth, elsewhere regularly and concentrically sculptured, by broad imbricated flattened folds before the indentation, by twice as numerous close shelving striæ behind it. Front side much the shorter, unsymmetrically rounded at the extremity. Hinder side rapidly contracted by the incurvation, behind the beaks, of both upper and lower edges, then gradually acuminate to a bluntly oblique extremity, the tip being more prominent dorsally. Front dorsal edge scarcely sloping, plano-convex; hinder dorsal slope rather slight, much produced, plano-retuse. Ventral margin arcuated in front, rising, after the central retusion, with little convexity. Escutcheon carinately defined, rather broad. Lunule just perceptible. Cartilage-pit small, triangular. Teeth numerous, particularly behind.—The epidermis is of a yellowish ash-colour.

6. *L. ELECTA*, *A. Adams*, f. 40, 41.—*T. anguste lanceolato-rostrata*, utrinque attenuata, æquilateralis, nivea, compressa, undique longitudinaliter striolata: striolæ anticæ minus conspicuæ; posticæ arctiores, magisque obliquæ. Extremitas postica obliquè subtruncata. Margo dorsalis posticus incurvatus, vix declivis; ventralis in medio arcuatus. Area impressa, crenato-marginata.—Elongated, beaked-lanceolate, thin, compressed, shining white, everywhere minutely yet distinctly sculptured: shelvingly scratched lengthways by fine striæ, which in front (where they are crossed by the wrinkles of growth) are more distant and less manifest, and become closer and more slanting posteriorly; the scarcely raised extreme posterior ridge is smooth to the eye, yet is barred with raised concentric wrinkles. Sides equal or very nearly so; the anterior one gradually tapering to a narrow rounded tip; the posterior one beaked and still more attenuated, the extreme tip obliquely subtruncated and angulated above. Front dorsal slope moderate, convex; hinder dorsal slope, slight, incurved. Ventral margin arched in the middle, rising at both ends, barely subretuse in front. Beaks minute, sharp, perceptibly projecting. Escutcheon sunken, crenately margined. Lunule perceptible.

7. *L. TAYLORI*, *Hanley*, f. 35.—*T. elongata*, anticè aliquantum brevior et rotundato-lanceolata, posticè attenuata et subrostrata; nivea, subcompressa, densius longitudinaliter striata: striæ anticæ concentricæ et elevatæ, mox acclinatæ et (certissimè in valvulâ sinistrâ ubi infernè prope plicam umbonalem planulatam demumque sublævigatam prorsus desunt) magis minusve obliquæ. Margo dorsalis uterque vix declivis. Area planulata, crenulato-marginata.—Elongated, rather shorter and rounded-lanceolate in front,

attenuated and subrostrated behind, rather compressed, shining white, striated lengthways throughout (except a small triangular space in the lower corner of the left valve just adjacent to the planulate umbonal ridge, which latter is also somewhat smoothish near its termination); striæ very close (rather less so in the front of the right valve), raised and concentric in front, then shelving and (at least in the left valve) more or less slanting. Dorsal edge but little sloping on either side, plano-convex in front, plano-retuse behind. Ventral margin much arched, rising almost equally at both ends. Beaks little prominent. Escutcheon narrow, flattened, well defined by the very prominent crenulated edge of the umbonal sidge. Front dorsal area less conspicuous, concentrically striated. Cartilage-pit broadly triangular, subemarginated below, sunken. Teeth numerous, especially behind.

8. *L. CRENIFERA*, *Sowerby*, f. 37, 38.—*T. angustè oblongo-lanceolata*, subæquilateralis, convexa, posticè rostrata et valde attenuata, undique striata: striæ concentricæ, densæ, argutæ. Margo dorsalis anticus convexiusculus, vix declivis; posticus retusus, declivis. Area magna, lævis, margine crenulato plicæ umbonalis circumscripta. Lunula magna, planulata, plicâ angustâ marginata.—Of an elongated oblong-lanceolate form, dull white, convex, concentrically striated (the lunule excepted) throughout: striæ for the most part extremely fine and close, less so on the narrow and scarcely elevated umbonal ridge (where they become shelving), and just after a narrow fold that bounds the large and flattened front dorsal area. Sides nearly equal: the front extremity attenuated, not well rounded above, very obliquely so below: the beaked hinder side much and gradually attenuated, its tip nearly central, very small and subtruncated. Front dorsal slope very slight, plano-convex; hinder dorsal slope moderate, retuse. Ventral margin arched in front, retuse before the hinder tip. Escutcheon large, smooth, well defined by the crenated edge of the umbonal ridge. Teeth numerous, especially behind.—Judging from the nuclear portion, which is somewhat remotely lamellated, and by no means elongated, the fry may readily be mistaken for a distinct species.

9. *L. METCALFEI*, *Hanley*, f. 34.—*T. elongata*, compressa, striis densis et argutis, quæ ante radium impressum anticum remotiores sunt et lamellosæ, posticè autem elevatæ et valde obliquæ fiunt, longitudinaliter corrugata. Extremitas lateris antici multum brevioris superne subangulata; rostri postici angusta, recurvata, obliquè subtruncata. Margines dorsales paululum declives; an-

ticus convexiusculus; posticus subrectus, denique autem incurvatus. Arcæ sicut in *L. creniferâ*.—Of a produced beaked-oblong shape, very inequilateral, not very thin, compressed, whitish, without an elevated umbonal ridge, with a well marked anterior broadish indented ray, before which the very fine close-set longitudinal wrinkles, which become raised and very oblique posteriorly, are lamellar and more distant. Extremity of the much shorter anterior side subangulated and more projecting above, obliquely rounded below. Hinder side much and gradually attenuated, beaked; its recurved tip narrow, obliquely subtruncated. Dorsal slopes very slight; the front one plano-convex; the hinder one incurved. Ventral margin much rising at both ends, arching up obliquely in front, convex behind. Beaks acute, scarcely prominent. Dorsal areas as in *crenifera*. Cartilage-pit small, sunken, triangular. Teeth very numerous, especially behind.—In the largest only of the three individuals known to me (one of which perchance may be adult) do the oblique striæ extend to the crenated ridge. The ventral margin is slightly indented a little beyond the middle, and just before its hinder termination.

10. *L. DECORA*, *A. Adams*, f. 47, 48.—*T. subæquilateralis*, parva, valida, subangustè oblongo-rostrata, posticè attenuata, albida, liris concentricis tenuibus undique corrugata. Extremitas rostri recurvati angusta, obliquè subtruncata. Margo dorsalis uterque vix declivis; posticus incurvatus. Area ampla, depressa, crenulato-marginata.—Of an elongated beaked-oblong shape, rather small, convex or subventricose, gaping slightly at both ends, dull white, concentrically lyrated (the dorsal areas excepted) throughout: the lyrated wrinkles very small and crowded, except upon the umboes, upon a ray-like anterior portion (where they are irregular and coarser), and along the umbonal ridge, which latter is retuse in the middle, and undefined anteriorly. Sides nearly equal; extremity of the slightly shorter anterior one narrowed, and symmetrically rounded: posterior side attenuated, gradually beaked; its tip narrow, recurved, obliquely subtruncated. Front dorsal slope rather slight; hinder dorsal slope slight, incurved. Ventral margin arched behind, straighter in front, subretuse at its termination and very slightly so in the middle. Es-cutchcon very large, depressed, creno-marginated. Lunule perceptible, simple. Cartilage-pit very small, triangular, sunken. Teeth moderately numerous on both sides.

11. *L. COSTELLATA*, *Sowerby*, f. 59.—*T. subangustè oblongo-rostrata*, compressa, subæquilateralis, liris remotis concentricè

lamellosa, cristis binis squamiferis posticè radiata. Extremitas rostri postici angusta, biangulata. Margo dorsalis uterque vix declivis; posticus incurvatus. Labia areæ magnæ, lævis, concavæ, protrusa.—Peaked elongated-oblong, rather thin, compressed, under an ashy or pale olivaceous ash-coloured epidermis glossy white, concentrically traversed by distant erect lamellæ, which terminate just before an umbonal ridge that is formed by two crest-like squamose ridges enclosing between them a flattish and nearly smooth area; intervals of the lamellæ unsculptured. Extremity of the moderately yet decidedly shorter anterior side attenuated, and unsymmetrically rounded: hinder side gradually beaked; the tip fine, biangulated, subcentral. Front dorsal slope very slight, plano-convex; hinder dorsal slope rather slight, incurved, rising at the extremity. Ventral margin arcuately rising in front, less so behind, slightly indented before the posterior tip. Escutcheon large, smooth, concave, yet with pouting lips. Lunule linear, smooth, conspicuous. Teeth on either side of the very small triangular cartilage-pit very numerous.—The epidermis is occasionally iridescent. A more or less obsolete anterior indented ray is generally perceptible.

12. *L. CONCINNA*, *A. Adams*, f. 54, 55.—*T. lanceolata*, posticè attenuato-rostrata, anticè supernè subangulata, valdè inæquilateralis, multum compressa, cute tenui cinereo-virescente induta, concentricè lamellosa; lamellæ supernè remotiores. Margo dorsalis anticus rectiusculus, vix declivis; posticus retusus, leviter declivis. Areæ dorsales elongatæ, læves, impressæ, angulatim circumscriptæ; labiis protrusis.—Lanceolate, very inequilateral, subangulated dorsally in front, attenuatedly beaked behind, rather thin, much compressed, only gaping at the very narrow biangulated and scarcely upturned posterior tip, covered with a thin greenish-cinereous epidermis, devoid of marked anterior indented ray, with a narrow umbonal ridge, which is subspinosely keeled on either side. General surface concentrically lamellated; intervals of the lamellæ, which are much more remote on the umboes, and somewhat more distant in front, smooth. Front dorsal slope slight, nearly straight; hinder dorsal slope rather slight, retuse. Ventral margin obliquely arching upwards in front, convex and moderately rising behind, retuse before the posterior tip. Dorsal areas elongated, smooth, angularly defined, impressed, but with the lips pouting.

13. *L. TENUISULCATA*, *Couthouy*, f. 87.—*T. L. pernulæ* assimilis, sed minor, radii impressi fere vel omnino expers, cute lutæa,

liris concentricis (quarum interstitia ferme sunt latiora) undique, etiam in plicam umbonalem concentricè et regulariter rugosa.—Resembling *pernula*, but smaller, oil-yellow, peculiarly compressed when young, almost or wholly devoid of an indented ray, concentrically traversed by even and regular lyrated striæ (whose intervals are, if anything, rather broader), which are equally perceptible on both valves, and pervade alike the umbonal ridge: front extremity more symmetrically rounded.

14. *L. PERNULA*, Müller, f. 56–58.—T. suboblongo-rostrata, valdè inæquilateralis, convexa, cutè olivaceâ vel olivaceo-lutescente induta, rugis elevatis tenuibus, in medio densis, ante radium impressum anticum remotioribus minusque argutis, ad extremitatem posticam subobsoletis, concentricè striata. Margo ventralis anticè obliquè arcuatus et multum acclivis; posticè rectior, demumque subretusus. Area acutè definita, multum producta, labiis protrusis; lunula obsoleta.—*Var.* Marginibus dorsalibus magis declivibus; postico incurvato.—Peaked elongated oblong, compressed behind, from convex to subventricose in the middle, with a more or less manifest indentation radiating with little obliquity from the beaks to nearly the front extremity of the opposite margin, clothed with a glossy epidermis that ranges in tint from yellowish-olive in the adult to olivaceous-yellow in the young, very closely and finely sculptured by raised concentric wrinkles, which, coarser and more distant before the indentation, become, for the most part, wholly or partially obsolete towards and upon the umbonal ridge (except, perhaps, above) and lunule, and are usually less conspicuous on the left valve. Posterior side about twice as long as the anterior (which is unsymmetrically rounded), subrostrated, and very gradually tapering to a very narrow truncated subcentral tip; umbonal ridge rather broad and flattened, not much raised, often divided by an indistinct groove. Front dorsal edge subretuse, moderately sloping; hinder dorsal edge higher, convex, less sloping. Ventral margin much and obliquely rising in front, arched anteriorly; posteriorly rather straighter, moderately rising, with a slight retusion before the ridge. Lips of the escutcheon, which is very long, and sharply defined, pointing. Lunule obsolete. Teeth on the average sixteen and twenty-four.—*Var.* Both slopes more decided; the hinder one incurved.

15. *L. BUCCATA*, Steenstrup, f. 63, 64.—T. sp. præcedenti simillima, sed brevior, minus inæquilateralis, magis ventricosa, marginibus dorsalibus magis declivibus, areâ latiore.—Most closely resembling an abbreviated *pernula* (being less elongated), but

stronger, less inequilateral, with more decided dorsal slopes, more ventricose, and only compressed near the hinder termination. The hinder side only occupies three-fifths of the total length, and tapers more abruptly than in the preceding species: the concentric wrinkles are less obsolete. The epidermis, which is scarcely glossy, is dusky-olive (with oftentimes a yellowish basal zone) on the mature shell, and oil-yellow on the young. The beaks are prominent, and the escutcheon broad. *Var.* Peculiarly broad and subtriangular.

16. *L. MINUTA*, *Müller*, f. 61, 62.—*T. subovato-conica*, posticè abbreviato-rostrata, inæquilateralis, cute vix nitente olivaceâ induta, liris concentricis (quarum interstitia aliquantum sunt latiora) subdensis undique striata; plicâ umbonali planulatâ. Margo dorsalis uterque declivis. Area magna, sublævigata, acute definita. Dentes haud permulti (sæpe 10–12).—Subovate-conic, more or less subventricose (when young, however, compressed), scarcely gaping, with a flattened umbonal ridge that is retuse in the middle, and (in the more ventricose individuals) a more or less perceptible indented and little slanting anterior ray, clothed with a rather dull epidermis, that ranges in tint from olive-brown to olivaceous-yellow; everywhere (the dorsal areas excepted) sculptured by rather close and even lyræ, which are narrower than their simple intervals. Anterior side filling about two-fifths of the entire length, almost symmetrically rounded. Posterior side more or less briefly beaked; the rostral tip narrow, biangular, subcentral. Dorsal slopes moderate, the front one nearly straight, the hinder one more or less curved. Ventral margin more or less arched, always rising behind; the rostral retusion slight. Escutcheon large, carinately defined, smooth, or obscurely grooved. Teeth not numerous (often ten to twelve). *Var. tumida*. Ventricose, almost pear-shaped, the slopes very decided. *Var. complanata*. Flatter, more produced, the dorsal slopes and ventral arcuation less decided.

17. *L. CAUDATA*, *Donovan*, f. 60.—*T. subovato-rostrata*, inæquilateralis, cute luteâ induta, undique arcetè et argutè lirata. Extremitas rostri abrupte coarctata, aliquantum recurvata. Margo dorsalis uterque declivis; anticus convexus; posticus retusus. Area magna, sublævigata, acutè definita.—Peaked ovate or oblong, usually rather compressed and devoid of an indented ray, at times subventricose, with an oil-yellow epidermis, everywhere with regular and even concentric lyræ (except upon the dorsal areas), which are narrower than their intervals. Extremity of the ante-

rior side, which occupies about two-fifths of the total length, somewhat narrowed and almost symmetrically rounded. Posterior side decidedly beaked, tapering rather quickly to a peculiarly small and narrow biangulated tip; umbonal ridge moderately broad, flat, but well defined by its horizontal lyræ, and its curved upper edge. Dorsal slopes moderate, the front one convex, the hinder retuse or incurved. Ventral margin decidedly arcuated, much rising in front, distinctly retuse before the hinder termination so as to abruptly pinch up the subcentral (and somewhat cocked-up) tip of the rostrum. Lips of the escutcheon, which is large, and clearly defined by an almost carinated rim, pouting. Lunule inconspicuous. *Var.* Ventricose, ovate-conic, usually with a few radiating lines on the umboes; dorsal slopes very decided; ventral margin peculiarly arched in front. Distinguished from *tenuisulcata* by the shape of the rostrum.

18. *L. LUGUBRIS*, *A. Adams*, f. 75, 76.—*T. inæquilateralis*, *ventricosa*, *ovato-trigona*, *posticè subrostrata et obtuse cuneiformis*, *cute olivaceo-tenebrosâ induta*, *undique concentricè lirata*: *liræ crassæ, remotæ*. *Margo dorsalis posticus rectiusculus, valdè declivis*; *ventralis anticus arcuatim acclivis*; *cardinalis latus*. *Areæ dorsales læves, magnæ, definitæ*. *Dentes magni, pauci*.—*Triangular-ovate*, *solid, ventricose*, *devoid of an umbonal ridge*, *clothed with a dusky yellowish-olive epidermis, regularly sculptured throughout (the large, smooth, well-defined, dorsal areas excepted) by remote subimbricated coarse concentric lyræ*. *Anterior side filling from two-fifths to three-sevenths of the total length, contracted and rounded at the extremity*. *Posterior side bluntly wedge-shaped, briefly and obscurely beaked*. *Hinder dorsal slope very decided, straightish*; *front one moderate, at first straight, then curved*. *Ventral margin much arched and rising in front; straighter behind*. *Beaks acute, reflected, prominent*. *Escutcheon well defined*. *Lunule subcordiform*. *Hinge-margin very broad; teeth few, very large*. *No cartilage-pit, but a short, yet very manifest, external ligament*. *Locality unknown*. *Size of a small parva*. Reminds one of a *Crassatella*.

19. *L. INCONSPICUA*, *A. Adams*, f. 77, 78.—*T. æquilateralis*, *oblongo-subconoidea*, *posticè supernè angulatim eminens*, *cute nitidâ olivaceo-cinereâ induta*, *radio haud impressa*, *undique (natis exceptis) sulcis tenuibus densis subinclinatis concentricè striata*. *Margines dorsales subdeclives, vix curvati*; *ventralis anticè subarcuatus*. *Area angulatim definita; duplex; exterior plicato-corrugata*.—*Oblong-subconoid, moderately strong, merely*

subventricose, only gaping at the posterior tip, clothed with a glossy olivaceous ash-coloured epidermis, devoid of an anterior indented ray, everywhere (beaks excepted) concentrically and somewhat shelvingly striated, or finely and closely grooved. Anterior extremity rounded, a little tapering: posterior side angularly projecting above. Dorsal slopes rather slight, little curved. Ventral margin subarcuated in front, obliquely and somewhat convexly rising (without indentation) at the hinder end. Beaks smooth, central or very nearly so. Front dorsal area inconspicuous. Escutcheon with pouting lips, angularly defined by the posterior ridge, divided into two concave areas by a radiating linear angulation; outer one plicately wrinkled; inner one nearly smooth. —My description does not precisely agree with Mr. Adams's, but both were drawn up from the unique example in Mr. Cuming's collection.

20. *L. LATA*, *Hinds*, f. 44, 45.—*T. subæquilateralis*, compressa, oblongo-lanceolata, eburnea, polita, nisi posticè et in medio superne sulcis inclinatis subremotis concentricè sculpta. Margo dorsalis utrinque rectiusculus et vix declivis; ventralis arcuatus. Area lanceolata, subduplex; interior sublævigata, planulata; exterior concava, sulcis inclinatis obliquè sculpta. Lunula planulata et obliquè striata.—Oblong-lanceolate, compressed, except at the umboes, which are convex, or even subventricose, scarcely gaping, of a polished ivory-white, smooth on the central umbonal region and posterior third, elsewhere concentrically graven with rather distant imbricating sulci. Anterior side slightly longer, its extremity a little attenuated, and unsymmetrically rounded. Posterior side peaked; the tip rather above the middle, with a short dorsal retusion. Front dorsal edge nearly straight, scarcely sloping: hinder dorsal edge straight or subretuse, a little sloping. Ventral margin regularly arched, much rising at both ends (obliquely so in front), devoid of retusion. Escutcheon lanceolate, well defined, subbipartite; the flattened top nearly smooth; the concave lower portion obliquely marked with distant imbricating sulci. Lunule manifest, flattened, obliquely striated. Interior subiridescent. Teeth very fine and numerous on both sides. The fry, which is grooved throughout, reminds one in shape of *navicularis*.

21. *L. BELCHERI*, *Hinds*, f. 53.—*T. angustè oblonga*, subæquilateralis, posticè sinuato-subtruncata, sulcis inclinatis subobliquis, nisi posticè, longitudinaliter sculpta. Regio postica superior infernè subito impressa, in medio lirâ vix elevatâ radiante divisa. Margo dorsalis anticè declivis et convexiusculus, posticè incurva-

tus, vixque declivis; ventralis tantum convexus. Area concava, carinâ definita; labiis protrusis. Lunula nulla. Dentes utrinque permulti.—Elongated oblong, twice as long as broad, without anterior indented ray, but in its ordinary place marked towards the lower margin with a few very obsolete radiating grooves. General surface (polished, *fide Hinds*) traversed by shelving somewhat slantingly longitudinal sulci, which are fainter in front and on the somewhat depressed umboes, and cease suddenly near the posterior end, leaving a planulate narrow strip, which is crowded with concentric wrinkles or striæ. Hinder triangle smoothish or finely wrinkled concentrically, and divided into three areas by a carinated line, which bounds the escutcheon (which is concavely impressed, but with pouting lips) by a very abrupt sinking of the surface which angularly limits the lowest area in front, and by a slightly raised radiating line, which stands halfway between these two. Extremity of the slightly shorter anterior side attenuatedly rounded; posterior side not beaked, sinuously subtruncated, being angulated by the triple projection of the radiations. Front dorsal slope decided, plano-convex; hinder dorsal slope rather slight, incurved. Ventral margin merely convex in front, straightish and without indentation behind. No defined front dorsal area. Teeth very, and nearly equally, numerous on either side of the rather large, shelving, triangular cartilage-pit. Mr. Metcalfe possesses two dead left valves. As the central keel does not extend to the umboes, it is probably wholly absent in the fry.

22. L. PELLA, *Linnaeus*, f. 65, 66.—T. ovato-oblonga, æquilateralis, posticè supernè abbreviato-cuneiformis, ventricosa, polita, eburnea, striis arcuato-obliquis et anticè divaricatis undique sculpta. Regio postica superior angusta, subito excavata, angulo infernè circumscripta, supernè costâ imbricato-squamosâ. Margo dorsalis utrinque subdeclivis, anticè rectiusculus, posticè subretusus, demumque emarginatus. Area sulco profundo definita, transversim lirato-corrugata. Lunula impressa, lanceolata.—Ovate-oblong, ventricose, glossy ivory-white, scarcely marked in front by an extremely shallow broad indented ray, and behind by a very suddenly excavated acutangular curved triangle that is notched at the base, is dorsally raised and squamosely imbricated, ventrally simple and subcarinately angulated. Surface everywhere sculptured by rather fine flexuously curved shelving striæ, which, for the most part, run obliquely downwards with a double curve from the front umbo, but before it arch in an opposite direction. Sides equal: front extremity a little tapering, unsymmetrically rounded: hinder extremity briefly rostrated, its tip turned up and rounded

off acute. Front dorsal slope nearly straight, slight: hinder dorsal slope rather slight, subretuse, emarginated eventually. Ventral margin subarcuated, much rising at both ends. Escutcheon plano-concave, corrugately lyrated across, flanked by a deep groove. Lunule concave, lanceolate, in the adult obscurely barred like the lunule, in the young finely wrinkled concentrically.

23. *L. BICUSPIDATA*, Gould, f. 73.—*T. inæquilateralis*, angustè ovato-oblonga; posticè attenuata, biangulata, bicuspidata; ventricosa, eburnea, obliquè striata; ad extremitatem anticam plicis angustis circiter 3 radiata. Regio postica superior excavata, inter carinas 3 serratas (quarum 2 sunt dorsales) lævigata. Margo dorsalis anticus convexus, declivis; posticus leniter declivis. Area lanceolata, sublævigata. Lunula inconspicua.—Produced ovate-oblong, a little subcylindrical, more or less ventricose, ivory-white, with about 3 narrow, close, prominent folds at the extreme front, and a posterior triangle, composed of a broad, smooth concavity, flanked by serrated keels (two approximate ones above, and one below), the ends of the two larger of which form two projecting points: surface elsewhere finely graven by numerous wavy, downwards-slanting, incised lines, whose intervals rise at the umbonal region into raised striæ. Extremity of the anterior side, which occupies about two-fifths of the total length, rounded: extremity of the attenuated posterior side biangular, deeply notched. Front dorsal slope moderate, convex: hinder dorsal slight, straight, or subretuse. Ventral margin arched in front, straighter behind. Escutcheon lanceolate, smoothish. Lunule inconspicuous. Teeth more numerous behind.

24. *L. ROSTRATA*, Montagu, f. 84.—*T. oblongo-rostrata*, subæquilateralis, eburnea, striis arctis longitudinalibus et posticè arcuato-obliquis undatim sulcata. Regio postica superior liris radiantibus approximatis, infernè circumscripta. Rostris extremitas angusta, recurvata. Margo dorsalis anticè vix declivis, posticè declivis et profundè incurvatus; ventralis valdè arcuatus. Area magna, longitudinaliter sulco-striata. Lunula inconspicua.—Beaked-oblong, subventricose, the ordinary site of an umbonal ridge occupied by a kind of lattice-work formed by several radiating linear keels and rather distant, transverse, raised striæ; ivory-white (sometimes very pale tawny), rather glossy, everywhere (dorsal areas excepted) waved with flexuous, closely disposed, subimbricating sulci, which, concentric at the nucleus, and somewhat so in front, become arched and slanting posteriorwards: Sides very nearly equal: front extremity very unsymmetrically rounded:

hinder side quickly forming an upturned beak, of which the rather narrow tip is convex, and above the middle. Front dorsal slope slight, straightish; hinder dorsal slope moderate, deeply incurved. Ventral margin much arcuated, rising obliquely in front, not retuse behind. Escutcheon large, defined, finely grooved lengthways. Lunule inconspicuous. Teeth numerous on both sides. Judging from the nucleus, the fry may readily be mistaken for a distinct species. Montagu described the species as new, and not as of Gmelin, whose *rostrata* was identical with *pernula*.

25. *L. CHUVA*, Gray, f. 67.—*T. L. crassæ* simillima, brevior autem, ovato-acuta, margine dorsali utrinque decliviore, ventrali magis arcuato; rostri extremitate altiore, magisque acuminatâ. Lyræ plicæ umbonalis nonnunquam infernè subobsoletæ.—Most closely resembling *crassa*, but is peaked-ovate; the slopes are consequently more decided, and the ventral margin more arched; the peak is rather more acuminated, and higher seated; the lyræ, too, are scarcely so prominent, and the arched ones on the umbonal ridge become, occasionally, almost obsolete at the lower extremity. The difference between this and *crassa*, var. *brevior*, is very trifling.

26. *L. CONFUSA*, Hanley, f. 85.—*T. æquilateralis*, ovali-acuta, posticè rostrata, haud ventricosa, cute cinereâ induta, sulcis densis concentricis undique sculpta. Rostri extremitas recurvata, acutè angularis. Plica umbonalis neque alta, nec anticè definita. Margo ventralis anticè convexus, vixque declivis; posticè declivis, principio rectiusculus, demum repentè incurvatus; ventralis utrinque acclivis, anticè arcuatus, posticè haud sinuatus. Areæ dorsales magnæ, lanceolatæ, labiis protusis: area sublongitudinaliter sulcata: lunula impressa.—Peaked-oval, convex or subventricose, with a shining ash-coloured epidermis, closely, regularly, and concentrically grooved throughout (the dorsal areas excepted); sulci shelving in front, their intervals converted into flattened costæ on the umboes and towards the umbonal ridge, which latter is neither elevated nor defined in front. Sides equal, or very nearly so: anterior extremity rounded; posterior side rather abruptly beaked, the tip, which is either in the middle or just above it, upturned and sharply angular. Front dorsal slope very slight, convex, with a sudden terminal retusion. Hinder dorsal slope moderate, at first straightish or plano-convex, eventually rather suddenly incurved. Ventral margin much rising at both ends, arcuated (at the least, in front), devoid of retusion. Dorsal areas large, pouting, lanceolate; escutcheon carinately defined, sublongitudinally grooved;

lunule impressly defined, its sulci finer. Interior bluish-white, the front edge, in adult examples, most minutely crenulated: hinge-margin broad, its teeth rather numerous on both sides. Cartilage-pit small, triangular. *Var. ? producta*.—More elongated, ventral margin less arched; hinder side more acuminate, its tip less recurved, and more acute; dorsal areas less pouting.

27. *L. CRASSA*, *Hinds*, f. 69.—*T. æquilateralis*, *ventricosa*, *oblongo-acuta*, *posticè subrostrata*, *costâ umbonali eminente et sulco profundo lato internè circumscriptâ munita*, *cute olivaceo-flavescente induta*, *suleis crassis densis* (quarum *interstitia latiora sunt*, *anticè inclinata*, *posticè rotundata*) *undique concentricè sculpta*. *Extremitas rostri valdè angusta, recurvata*. *Margo dorsalis anticè vix declivis, posticè subdeclivis et profundè incurvatus; ventralis arcuatus, posticè multum acclivis*. *Area magna, lanceolata, longitudinaliter lyrata: lunula angusta, longitudinaliter striata*. *Var. brevior*. *T. ovato-acuta; margine dorsali utrinque magis declivi*.—Peaked-oblong, strong; *ventricose*, with a curved, rounded, prominent umbonal ridge, that is cut off below by a broad and profound groove: under a yellowish olive-coloured epidermis, glossy-white (tawny when discoloured), everywhere coarsely and closely grooved concentrically; the much broader intervening *lyræ* subimbricated in front, rounded behind. Sides very nearly equal; the front, which, if either, is the longer, with an obscure, shallow, radiating indentation (which waves the sulci), rounded at its extremity. Posterior side quickly tapering, subrostrated; the tip of the upturned beak very narrow, higher than the middle of the shell. Front dorsal slope very slight, barely convex: hinder dorsal slope rather slight, deeply incurved. Ventral margin more or less arched, not retuse, much rising posteriorly. Escutcheon large, lanceolate, well defined by the raised (and, as it were, crenated) umbonal ridge, *lyrated lengthways*. Lunule narrow, perceptible, finely grooved lengthways. Hinge-margin broad; cartilage-pit rather small, triangular; teeth numerous on both sides. *Var. brevior*. Peaked-ovate; the slopes more decided.

28. *L. GIBBOSA*, *Sowerby*, f. 79.—*T. æquilateralis*, *ventricosa*, *oblongo-rostrata*, *cute induta*, *costis subarctis subrotundatis undique sculpta*. *Extremitas rostri acuta, subrecurvata*. *Margo dorsalis anticè convexiusculus et vix declivis, posticè declivis demumque incurvatus; ventralis posticè sinuatus*. *Area magna, concava, longitudinaliter lyrata, plicâ umbonali supernè acutè angulari, circumscripta*. *Lunula inconspicua*.—Beaked-oblong, solid, *ventricose*, chalky-white under an epidermis that ranges in

tint from brownish-fulvous to pale olive, not radiatingly indented anteriorly, concentrically ribbed throughout: ribs close, about as broad as their narrow smooth intervals, somewhat rounded. Sides equal or nearly so; extremity of the anterior side (which, if either, is the longer) a little tapering, and unsymmetrically rounded: posterior side gradually beaked, the tip acute, slightly upturned below the middle. Front dorsal slope slight, plano-convex; hinder dorsal slope decided, upon the whole retuse, though a little convex before the incurved termination. Ventral margin arcuated and much rising in front, straighter and less rising behind, indented before the base of the umbonal ridge, which latter is not raised, but is sharply angulated posteriorly. Escutcheon large, concave, angularly defined by the umbonal ridge, lyrated lengthways throughout. Lunule (if any) smooth, linear, inconspicuous. Teeth rather numerous on either side.

29. *L. ELENENSIS*, *Sowerby*, f. 70-72.—*T. æquilateralis*, posticè rostrato-acuminata, cute cinereâ aliquando lutescente nonnunquam subolivaceâ induta, crassè et concentricè costata. Plica umbonalis eminens, subangulata, sulco infernè dilatato anticè circumscripta. Margines dorsales subdeclives; posticus incurvatus; ventralis posticè acclivis, subsinuatus. Area impressa, ovali-acuta, longitudinaliter plicato-corrugata. Lunula angustissima, transversim porcata.—*Var. gibbosa*. *T.* tumida; margine ventrali anticè multum arcuato, posticè multum acclivi: rostro valdè recurvato. *Var. media*. *T.* haud tumida; rostro haud recurvato. *Var.? pyriformis*. *T.* oblongo-rostrata, anticè valdè angustata; rostro haud recurvato.—Beaked-ovate or subovate, ventricose, clothed with an epidermis that ranges in tint from yellowish-cinereous to olivaceous ash-colour, rayed with an enlarging sulcus before the prominent subangular edge of the umbonal ridge, coarsely rather closely and concentrically ribbed throughout (the dorsal areas excepted); ribs erect on the umboes, depressed and shelving in front and below, more or less interrupted and attenuated at the posterior fang-shaped sulcus, again enlarged and very prominent on the umbonal ridge: their intervals simple. Sides equal or very nearly so: front extremity bluntly convex, somewhat narrowed: hinder side rostrato-acuminated, gaping at the tip. Dorsal slopes rather slight or moderate, the front one plano-convex: hinder one more or less incurved. Ventral margin arcuated in front, straighter and rising behind, somewhat indented near the posterior end. Lunule very narrow, well defined, ridged across: escutcheon rather profound, rather large, peaked-oval, plicately wrinkled lengthways.—*Var. gibbosa* (*Conch. Ill.* f. 14). Beaked-ovate, very ventricose, the

anterior indented ray not very conspicuous; ribs scarcely so broad as their intervals; front extremity only slightly narrowed; rostrum much recurved, its tip above the middle; ventral margin remarkably arched in front, and much rising behind.—*Var. media* (*Nuc. cuneata*, Hanley, Rec. Bivalves, pl. 19, f. 57, not description). Beaked-subovate, ventricose; the indented ray very manifest: the lower sulci narrower than the ribs; rostrum not recurved, central.—*Var. ? pyriformis*. Beaked-oblong, much narrowed in front, ventricose; the indented ray distinct; upper costal interstices as broad as the ribs, lower ones less so; rostrum not recurved, sub-central.—Under a very powerful lens some minute radiating lines may be discerned on the umbonal ridge (the projection of the ribs upon which is a salient characteristic), and sometimes, too, on the outer portion of the front ventral margin. Were it not for the intermediate form, the produced variety? (for which, if a species, I would suggest the name *pyriformis*, but have only as yet seen a single specimen) could not possibly have been identified with the more typical (or rather the first delineated) form, the peculiarities of which seem only developed in mature examples.

30. *L. BELLULA*, *A. Adams*, f. 74.—*T. subinæquilateralis*, tumida, oblongo-acuta, posticè longior et acutè rostrata aliquantumque recurvata, cute pertenui cinereâ induta, undique lamelloso-costellata. Margo dorsalis posticus subretusus, subdeclivis; ventralis in medio valdè arcuatus, posticè rectiusculus et conspicuè acclivis. Area angulo circumscripta, longitudinaliter lamelloso-corrugata. Lunula parva, inconspicua.—Peaked-oblong, swollen at the umboes, much compressed behind, white under a very thin not much polished cinereous epidermis, without anterior indented ray, ridged throughout (dorsal areas excepted) with moderately distant concentric lamellar costellæ, which are flattened in front, converge posteriorly, and surmount the upper edge of the inconspicuous umbonal ridge. Extremity of the somewhat tapering and rather shorter anterior side rounded; posterior side rapidly and sharply beaked; its tip angular, slightly upturned, and rather above the middle. Front dorsal slope moderate, convex: hinder dorsal slope rather slight, somewhat retuse. Ventral margin greatly arched in the middle, rising convexly in front, peculiarly and subrectilinearly ascending behind: posterior retusion, if any, slight. Escutcheon angulately defined, lamellately wrinkled lengthways. Lunule small, rather inconspicuous, scarcely impressed, concentrically wrinkled.

31. *L. FRAGILIS*, *Chemnitz*, f. 169.—*T. æquilateralis*, subtumida,

pone umbones retusa, ovato-acuta, in medio lator, costellis concentricis densis (supernè remotioribus) undique sculpta. Margo dorsalis anticè declivis, præcipuè rectus, ad extremitatem convexus; posticè subrectus; ventralis anticè et in medio multum arcuatus, posticè multum acclivis. Areae dorsales magnæ, rugis remotis subobliquis liratae. Area ipsa subduplex; interior tantum tenuiter longitudinaliter rugosa; exterior retusa.—Peaked-ovate, ventricose or tumid at the umboes, a retusion of surface behind them, whitish (often stained with rust-colour, when dead); umbonal ridge a little convex, and defined anteriorly by a slight radiating indentation; entire surface (the dorsal areas excepted) most closely sculptured concentrically by riblets which lie further apart, and are more conspicuous on the umboes. Sides equal, or nearly so: middle region broad, quickly tapering to a rounded extremity in front, and to an acute angle, whose apex is either in the middle or rather above it, behind. Front dorsal slope moderate, at first straight, then convex. Hinder dorsal slope nearly straight. Ventral margin much arcuated in the middle and anteriorly, much and somewhat straightly rising behind, devoid of manifest retusion, except a slight one near its posterior end. Dorsal areas large, marked with rather large, obliquely subconcentric, distant, raised wrinkles, which do not extend to the middle of the bipartite, well defined escutcheon, which is retusely impressed near its margin only, the more raised core being very finely wrinkled lengthways, thus forming a series of obtuse angles. Cartilage-pit small, triangular. Hinge-margin broad: the teeth rather numerous on both sides.—Although the costellar intervals are simple, yet one or two minute, raised, radiating lines may in very fine specimens be discerned at the commencement of the retusion which precedes the posterior ridge.*

32. *L. VENTRICOSA*, *Hinds*, f. 88, 89.—*T. æquilateralis*, supernè magis minusve tumida, angustè ovali-acuta, liris concentricis undique sculpta. Extremitas rostri angusta. Margines dorsales tantum subdeclives; anticus convexiusculus; posticus rectiusculus. Areae dorsales profundè impressæ: area ipsa magna, rugis lamellosis infernè obliquis remotiusculis, supernè longitudinalibus arcuatisque, ornata. Lunula lineis elevatis obliquis infernè tuberculata.—Peaked oval-oblong, ventricose, tumid at the umboes,

* This is not the *N. striata* of King, in the 'Zoological Journal' (v. p. 337), who, not being a conchologist, has so described his species that it is practically undefined. "*T. striata*, subtumida, crassa, subtrigona, alba; latere antico (postico) productiore, subrostrato; long. $\frac{2}{3}$; lat. $\frac{1}{3}$ poll." His specimen was from deep water, twenty miles from the shores of Patagonia.

then rather quickly compressed, subretuse before the convex umbonal ridge, white, concentrically lyrated throughout (dorsal areas excepted); lyræ depressed and shelving anteriorly, rather distant on the umboes, close near the circumference; their intervals simple. Sides equal, or very nearly so; the anterior one sub-attenuated and subangulately rounded at its extremity; the posterior one angular, beaked, its tip fine and convex. Dorsal slopes rather slight; the front one plano-convex; the hinder straightish, yet a little disturbed by the pouting of the lunular lips. Ventral margin much rising at both ends, briefly subretuse before the posterior tip. Dorsal areas strongly impressed, sharply defined: the escutcheon large, adorned at its retuse circumference with rather distant slanting lamellar wrinkles, which become close and longitudinal centrally. Sides of the lunule furnished with slanting linear tubercles (or tubercular wrinkles), which do not reach the sutural edge. Teeth rather numerous on both sides.

33. *L. EBURNEA*, *Sowerby*, f. 90.—*T. æquilateralis*, *ventricosa*, anticè semielliptica; posticè acuminata vixque recurvata; undique sulcata, cute nitidâ pallidè olivaceo-lutescente induta; radii impressi plicæque umbonalis fere expers. Margo dorsalis posticus retusus; ventralis posticè multum acclivis. Area profundè impressa, longitudinaliter lirata. Lunula lanceolata, lineâ circumscripta, concentricè costellato-rugosa.—Twice as long as broad, almost, if not quite, equilateral, semielliptic in front, sharply acuminate behind, ventricose, (almost tumid at the umboes, moderately compressed posteriorly,) clothed with a shining pale yellowish-olive epidermis, with only a very faint indented ray, and a scarcely raised umbonal ridge, which is nearly smooth above. General surface regularly sulcated throughout: the interstitial spaces, which anteriorly are shelving, elevated posteriorly into converging lyræ. Hinder peak sharp, subcentral, scarcely upturned. Dorsal margin convex in front, retuse behind: ventral margin much arcuated in front, straighter and much rising behind, without marked posterior retusion. Lunule lanceolate, linearly defined, with concentric costellar wrinkles: escutcheon angularly defined, deeply impressed, lyrated lengthways. Hinge-margin broad. Teeth numerous on either side of the minute triangular cartilage-pit, more so in front.

34. *L. FULGIDA*, *A. Adams*, f. 91.—*T. æquilateralis*, oblongo-acuta, anticè tumida, lævis, cute pertenui politâ cinereo-lutescente vel olivaceo-lutescente induta, radii impressi plicæque umbonalis expers. Extremitas postica angusta, subrecurvata, rotundato-angu-

lata. Margo dorsalis anticus vix declivis; posticus declivis, retusus. Areæ dorsales haud definitæ.—Peaked-oblong, tumid in front, cuneiformly compressed behind, scarcely, if at all, gaping, clothed with a very thin polished epidermis, that ranges in tint from cinereous-yellow to yellowish-olive, quite smooth throughout, devoid of anterior indented ray or umbonal ridge. Sides equal or very nearly so; the anterior, if either, the shorter, tapering to an unsymmetrically rounded extremity: the posterior gradually peaked to a narrow and slightly upturned, rounded off, subcentral angle. Front dorsal slope slight, at first straight, then convex, or plano-convex: hinder dorsal slope moderate, retuse. Ventral margin arched, and much rising in front, convex and moderately rising behind, devoid of marked posterior retusion. Dorsal areas wholly undefined.

35. *L. FASTIDIOSA*, *A. Adams*, f. 82, 83.—*T. æquilateralis*, *ventricosa*, *oblongo-acuminata*, *posticè subcuneiformis*, *et vix recurvata*; cute nitidissimâ olivaceo-lutescente induta, supernè lævigata, infernè longitudinaliter striata; striæ anticæ arcuissimæ, posticæ remotiores minusque conspicuæ. Margo dorsalis anticus leniter declivis; posticus retusus, declivis. Area retusa, satis magna, subangulatim definita, longitudinaliter lamelloso-rugosa: lunula vix impressa, concentricè striata.—Acuminated-oblong, ventricose, scarcely gaping even at the tip, clothed with a highly polished yellowish-olive epidermis, devoid of either umbonal ridge or indented ray, smooth on the umboes, striated lengthways below; the striæ very close and converging behind, fainter, more remote, and concentric in front. Sides equal or very nearly so: front extremity a little tapering and subangulately rounded; hinder side subcuneiformly acuminate, the tip fine, scarcely upturned, below the middle. Front dorsal slope rather slight, plano-convex: hinder dorsal slope decided, retuse. Ventral margin arched and much rising in front, straighter and less rising behind, without posterior retusion. Lunule very slightly impressed, concentrically striated, almost, if not wholly, undefined. Escutcheon retuse, rather large, subangulately defined, lamellately wrinkled lengthways.

36. *L. POLITA*, *Sowerby*, f. 68.—*T. oblongo-acuminata*, *æquilateralis*, ad umbones *ventricosa*, *posticè compressa*, cute cinereo-virescente politâ induta, plicæ umbonalis expers, juxta extremitatem posticam lævigatam breviter obliquè striata (in exemplis adultis in medio infernè longitudinaliter remotè sculpta). Margo dorsalis anticè vix declivis; posticè retusus, declivis. Area impressa, angustè lanceolata, longitudinaliter lirata. Lunula inconspicua.

—Acuminated-oblong, more or less ventricose at the umboes, but compressed behind, white under a polished, iridescent, ash-green epidermis, devoid of either an umbonal ridge or a conspicuous anterior indented ray; surface adjacent to the smooth site of the former obliquely striated for a brief space, elsewhere, at most, concentrically wrinkled (but in full-grown examples with conspicuous, remote, flexuously longitudinal striæ in the middle, near the lower edge). Sides equal or nearly so: front extremity unsymmetrically rounded: hinder side gradually and remarkably acuminated, the tip fine, acutangular, subcentral. Front dorsal slope slight, plano-convex; hinder dorsal slope moderate, retuse. Ventral margin much rising at both ends, arched in front, convex in the middle, gradually retuse before the hinder termination. Escutcheon impressed, narrow-lanceolate, lyrated lengthways. Lunule inconspicuous, at most linearly defined and unsculptured. Teeth very numerous on both sides of the small cartilage-pit.

37. *L. NASUTA*, *Sowerby*, f. 86.—*T. oblongo-acuta*, posticè multum sensimque attenuata et subrostrata; æquilateralis, satis ventricosa, radii impressi expers, sulcis densis longitudinaliter sculpta, ad regionem solitam convexiusculam plicæ umbonalis repentiè lævigata. Margo dorsalis anticè vix declivis, posticè incurvatus et declivis. Area impressa, planulata, longitudinaliter sulco-lirata. Lunula simplex, angusta, lineâ circumscripta.—Peaked-oblong, more or less ventricose, but gradually compressed behind, white, without anterior radiating indentation; general surface very closely grooved lengthways, so that the interstitial costellæ (which are about as broad as the sulci) converge behind, and cease abruptly at the plano-convex site of an umbonal ridge. Sides equal or very nearly so; front extremity unsymmetrically rounded, rather tapering; hinder side subrostrated, much and gradually attenuated, its tip rotundately acutangular. Front dorsal slope very slight, plano-convex; hinder dorsal slope more decided, incurved. Ventral margin arched and obliquely rising in front, straighter and moderately rising without manifest retusion behind. Escutcheon flatly impressed, moderate, sulcato-lyrated lengthways. Lunule simple, narrow, linearly defined. Hinge-margin broad. Teeth moderately numerous on either side of the small and broadly triangular cartilage-pit.

38. *L. MAURITIANA*, *Sowerby*, f. 99.—*T. ovato-rostrata* (nonnunquam angustior), posticè repentiè attenuato-rostrata, æquilateralis, ventricosa, candida, nitidissima, undique longitudinaliter arcuè sulcata. Rostrum extremitas utrinque coarctata, angustissima,

conspicuè recurvata. Margo dorsalis anticè vix declivis, posticè bis incurvatus; ventralis in medio maximè arcuatus, utrinque multum acclivis. Aræ dorsales haud insculptæ; antica inconspicua; postica concaviuscula, et sulco lato profundo circumscripta. —Beaked-ovate, ventricose or tumid, only (yet much) gaping at the hinder tip, of a polished ivory-white, with a very faint anterior indented ray, closely grooved lengthways throughout; the sulci shelving, except upon the beaks and near and upon the feebly developed umbonal ridge, where they become broader and square-cut, and their intervals form costellæ. Anterior extremity rotundately subangulated above, obliquely rounded below. Posterior side attenuatedly beaked, its tip, which is contracted at its origin both above and below, very narrow (yet blunt), peculiarly upturned (in the adult), and above the middle. Front dorsal slope very slight, straightish or plano-convex: hinder dorsal slope with a double incurvation. Ventral margin much arcuated in the middle and front, straighter behind, much rising at both ends, slightly retuse near its posterior termination. Dorsal areas smooth or nearly so: the front one inconspicuous; the hinder one plano-concave, environed by a deep, broad sulcus, which angulates its sides, and makes it appear raised.—Under a powerful glass, a few radiating lyræ may be descried near the commencement of the indented ray: they are best seen in the younger individuals, which are usually pale fulvous, and do not display the cocked-up beak, being merely acuminate to a subcentral tip (Rec. Biv. pl. 19, f. 46).

39. L. PUELLATA, *Hinds*, f. 94.—*T. perparva*, subæquilateralis, obovato-acuta, anticè latè rotundata, in medio tumida, posticè compressa et repentè recurvato-acuminata; alba, oculo armato anticè inclinato-sulcata, posticè arctius sulco-costellata, radii impressi expers, plicâ umbonali planulatâ, sed utrinque angulari, munita. Margo dorsalis anticè vix declivis, posticè retusus declivisque; ventralis anticè multum arcuatus, posticè rectior et multum acclivis. Area angulatim definita, duplex; interior planulata, lævis, lineâ carinatâ circumscripta. Lunula inconspicua. —Small, peaked-obovate, subequilateral, tumid in the middle, compressed behind, white, devoid of a coloured epidermis or an anterior indented ray; smooth to the eye, but under the lens most closely and finely (the dorsal areas excepted) sulcato-costellated; umbonal ridge planulate, subcarinately angular on either side. Front extremity broadly rounded: hinder extremity abruptly acuminate; the tip upturned, rather above than below the middle. Front dorsal slope slight, plano-convex. Hinder dorsal slope moderate, retuse. Ventral margin much arcuated in the middle

and front, much rising but straighter behind, subretuse before the hinder extremity. Escutcheon large, angulately defined, double; inner portion flattened, narrow, smooth; outer region with indistinct lamellar wrinkles. Lunule smooth, inconspicuous. Hinge-margin broad: cartilage-pit very small, the teeth on either side of it rather numerous.—Has the aspect of a *Neæra*. The epidermis is a mere iridescent film. The sculpture is occasionally obsolete on the umboes.

40. *L. CUNEATA*, *Sowerby*, f. 92, 93.—*T. parva*, ventricosa, subinæquilateralis, ovato-acuta, posticè repentè rostrata, cute olivaceo-virescente vel olivaceo-cinereâ induta, concentricè et arcuè costellata, ad regionem solitam plicæ umbonalis lævigata. Extremitas rostri recurvati obtusè angularis. Margo dorsalis anticè brevis et subdeclivis; posticè rectiusculus satisque declivis; ventralis anticè arcuatus, posticè rector magisque acclivis. Area magna, excavata, longitudinaliter tenuissimè costellata. Lunula nulla.—Small, beaked-ovate, ventricose, hardly even gaping at the posterior tip, without conspicuous indented ray, clothed with a not much shining ashy-olive or greenish-olive epidermis, closely costellated concentrically; the riblets obsolete on the unelevated site of an umbonal ridge, their intervals smooth, narrow (especially below). Extremity of the somewhat shorter anterior side unsymmetrically rounded: posterior side rapidly beaked, the rostrum turned up, the tip bluntly angular, nearly in or slightly above the middle. Front dorsal slope short, rather slight, straightish; hinder one moderate, upon the whole straightish, being retuse at both ends, and slightly convex in the middle. Ventral margin arched in front, straightish and more rising behind, without indentation. No defined dorsal area in front; the hinder one large, excavated, very finely longitudinally costellated throughout, concavely impressed at its circumference.

41. *L. ORNATA*, *D'Orbigny*, f. 97, 98.—*T. parva*, angustè ovato-acuta, posticè sensim acuminato-rostrata, subinæquilateralis, porcâ angustâ sulcoque approximato anticè radiata, cute subolivaceo-cinereâ induta, costellis argutis densis subdepressis concentricè sculpta. Margo dorsalis anticè subdeclivis; posticè declivis. Area magna, angulatim definita, arcuè et tenuissimè longitudinaliter costellata, labiis protrusis. Lunula angusta, inconspicua.—Peaked ovate-oblong, subventricose, conspicuously gaping at the hinder tip, clothed with a somewhat olivaceous ash-coloured epidermis, with an anterior indented ray that is flanked in front by a narrow ridge or keel; most closely, finely, and evenly costellated; riblets

concentric, rather depressed, usually absent above just behind the subangular yet not much raised umbonal ridge. Extremity of the somewhat shorter anterior side narrowed, bluntly rounded. Posterior side gradually attenuated to an acuminate beak, the tip subcentral, slightly upturned. Front dorsal slope somewhat convex, not very decided: hinder dorsal slope moderate, straightish, eventually incurved. Ventral margin arched in front, straighter and more rising behind, not conspicuously indented posteriorly. Lunule narrow, inconspicuous: escutcheon large, angularly defined, densely and most finely costellated lengthways, its lips protruding. Under a powerful lens, some minute interstitial lyræ may at times be descried both on the umboes and behind them.—D'Orbigny, in his plate, has corrected the larger admeasurement (20 millimètres) he had indicated in his text.

42. *L. CÆLATA*, *Hinds*, f. 95, 96.—*T. ovali-acuta* (nonnunquam latior), posticè rostrata, æquilateralis, ventricosa, cute olivaceo-flavidâ nitidissimâ induta, undique, nisi posticè supernè, concentricè sulcata. Extremitas rostri angularis, recurvata. Margo dorsalis anticè magis minusve declivis; posticè declivis, vel subdeclivis, demum incurvatus; ventralis utrinque aclivis, anticè arcuatus, in medio tantum convexus. Areæ dorsales sicut in *L. ventricosa*, obsoletius autem insculptæ.—Peaked-oval (or oboval), more or less ventricose, retuse near the hinder slope, briefly yet patulously gaping at the hinder tip, clothed with a lustrous yellowish-olive epidermis, concentrically grooved, except on the dorsal areas, and a smooth, narrow, triangular slip adjacent to the posterior slope: umbonal ridge scarcely elevated. Sides subequal; the front, if either, the longer, rounded at its extremity; posterior side quickly beaked, its angular and upturned tip central. Front dorsal edge more or less sloping and convex: hinder dorsal slope more or less decided, incurved at its termination. Ventral margin rising at both ends, arched in front, convex in the middle, nowhere conspicuously retuse. Dorsal areas nearly like those of *ventricosa*, but the sculpture somewhat obsolete.*—The shape (with its cor-

* I am unable to procure an example of a *Leda* said to resemble this species, but here condense the published description.—

L. SULCULATA, *Couth.*—Thick, with a dark-olive skin, modified oval, rounded and smooth at the anterior extremity, elsewhere with fine sharply incised concentric lines; attenuated and subrostrated behind, the tip (which is more prominent above) somewhat obliquely truncated. Umbonal ridge blunt. Beaks protuberant, anterior. Ventral edge curved. Lunule large, oval, profound, with mere wrinkles of increase. Escutcheon ample, broadly elliptical, defined by an incised line, faintly striated. Teeth 15–20. $\frac{1}{2}$ — $\frac{1}{3}$ — $\frac{2}{15}$.

The *Lembulus sulcatus* of Risso is too inadequately defined for identification

responding modification of slopes and ventral arcuation) varies much in different individuals: the posterior smoothness seems a constant character.

43. *L. MICANS*, *A. Adams*, f. 100.—T. ovali-acuta, posticè repentè rostrata, æquilateralis, subventricosa, ante plicam umbonalem obsoletam supernè retusa, cute nitidâ cinereâ induta, undique concentricè sulcata. Extremitas rostri recurvata, angularis, subcentralis. Margo dorsalis anticè satis declivis; posticè rectiusculus, demum incurvatus; ventralis valde arcuatus, utrinque, posticè præsertim, multum acclivis. Area magna, ovali-lanceolata, longitudinaliter crassè rugosa. Lunula acutè definita, satis magna, transversim porcata.—Peaked-oval, convex or subventricose, scarcely gaping, with a glossy, somewhat iridescent, cinereous epidermis, graven throughout (dorsal areas excepted) with concentric sulci, which are shelving in front, and whose intervals become costæ at the umboes and posteriorly: umbonal ridge region not elevated. Sides equal or very nearly so: front extremity attenuatedly rounded; hinder end abruptly beaked, the tip recurved, angular, subcentral. Front dorsal slope moderate, plano-convex: hinder dorsal slope decided, straightish, incurved at the end. Ventral margin much arcuated, much rising at both ends, especially behind. Escutcheon large, oval-lanceolate, coarsely wrinkled lengthways, defined by the projection of the umbonal ridge, pouting. Lunule sharply defined, rather large, barred across with short ridges.—The posterior ridge is preceded near the beaks by a marked retusion, and there is an obsolete narrow indented ray in front of the valves.

44. *L. CONRADI*, *Hanley*, f. 101.—T. subovato-acuta, posticè longior et acutissimè acuminata, valde inæquilateralis, radii impressi expers, cute subolivaceo-flavâ induta, costis crassis concentricis (ad marginem plicæ umbonalis angularem pluribus), et sulcis supernè latis, infernè angustis, undique sculpta. Margo dorsalis anticè subdeclivis; posticè rectiusculus, declivis. Area magna, angulatim definita, infernè plicato-corrugata. Lunula nulla.—Peaked-subovate, very inequilateral, subventricose (very gradually diminishing in convexity behind), devoid of any trace of an indented ray, clothed with a scarcely lustrous subolivaceous-yellow epidermis, concentrically ribbed throughout. Ribs coarse, with smooth intervals that above are as broad as the ribs, below are mere sulci, peculiarly crowded by the addition of interstitial ones on the angular margin of the posterior ridge. Anterior side short, tapering and rounded at the extremity: posterior side gradually,

simply, and very sharply acuminate, the tip subcentral, rather below than above the middle. Front dorsal slope short, rather slight, plano-convex: hinder dorsal slope produced, moderate, straightish. Ventral margin more or less arcuated in front, rising with less convexity and without terminal indentation behind. No defined dorsal area in front: hinder one large, angularly defined, plicately wrinkled at the circumference, smoothish in the middle. —A single specimen, without known locality, is present in Mr. Taylor's fine collection. The form reminds one of Conrad's *eborea*, but the sculpture differs. The ribs on the posterior ridge form obtuse angles with the concentric ones.

45. *L. COMMUTATA*, *Philippi*, f. 80, 81.—*T. perparva*, ovato-acuta (sæpe angustior), posticè repentè acuminato-subrostrata, subæquilateralis, albida, undique dense et concentricè lirata, porcâ anticâ radiata. Margo dorsalis anticè leniter declivis; posticè vix subretusus; ventralis arcuatus, utrinque multum acclivis. Area magna, ovali-lanceolata; infernè concaviuscula, longitudinaliter crenata. Lunula minima, inconspicua.—Small, peaked-ovate (often a little elongated), subventricose, whitish, with a radiating fold near the front extremity, closely and concentrically lyrated throughout; the interstitial sulci broader and unsculptured. Extremity of the slightly shorter anterior side contracted and rounded. Posterior side rapidly acuminate; the sharp subrostrated tip nearly subcentral. Front dorsal slope very moderate, convex or plano-convex; hinder dorsal slope straightish or subretuse. Ventral margin arched, much rising at both ends, straighter behind, scarcely, if at all, retuse before the obsolete or planulate umbonal ridge. Escutcheon large, oval-lanceolate, near its subcrenated keel-like limits more concave and longitudinally crenated. Lunule more or less conspicuous, very small, merely wrinkled.*—This tiny species was apparently comprehended by Chemnitz in his *Arca fragilis* (Conch. Cab. vii. p. 199), but his figure (f. 546) represents a much larger shell.

46. *L. RETICULATA*, *Hinds*, f. 103.—*T. minima*, ventricosa, ovato-acuta, posticè acuminata vixque recurvata, æquilateralis,

* I am unable to recognize a shell said by Philippi to closely resemble his *commutata*, but to be devoid of the radiating fold, and to be nearly smooth in the middle and front.—

L. ANALIS (Nucula, a, *Philippi*, *Zeitsch. Malak.* 1851, p. 87).—"T. ovato-oblonga, gibba, anticè rotundata, posticè in rostrum acutum elongatum adscendentem producta, transversim sulcata; carinâ lamellosâ aream cingente; carinâ radiante in media areâ; serie punctorum impressorum, utrinque lunulam oruante, carinâ lateris antici omnino obsoletâ. $\frac{3}{4}$. China."

costis concentricis crassis subremotis, lirisque radiantibus interstitialibus undique decussata. Margo ventralis arcuatus, utrinque acclivis. Area profundè impressa, elliptico-lanceolata, subduplex, supernè longitudinaliter rugosa, infernè (etiamque lunula angusta) transversim costellata.—Very small, peaked-ovate, more or less ventricose, white (without epidermis?), devoid of indented ray, everywhere coarsely ribbed (dorsal areas excepted). Ribs longitudinal (not concentric); their intervals, which are quite as broad as the ribs, and in front, where the latter are somewhat divergent, rather broader, everywhere adorned with radiating lyræ. Sides equal or very nearly so; anterior end somewhat narrowed and rounded. Posterior side acuminate, the tip bluntly acutangular, subcentral, scarcely upturned. Dorsal slopes moderate; front one convex; hinder one at first straightish, then convex, eventually incurved. Ventral margin arcuated, rising at both ends. Lunule narrow, barred across; escutcheon rather large, lanceolated-elliptic, deeply and abruptly impressed, almost double, wrinkled lengthways in the middle, costellated across at the circumference. Hinge-margin very broad: cartilage-pit minute, perpendicular, triangular.

47. *L. BROOKEI*, *Hanley*, f. 106.—*T. minuta*, subæquilateralis, latè ovato-conica, posticè repentè acuminata vixque recurvata, ventricosa, eburnea, radii impressi expers, undique concentricè costata; interstitia costarum angustarum æqualiter lata, in medio lævia, utrinque creno-lirata. Margo dorsalis anticè brevis, satisque declivis; posticè rectiusculus, declivis; ventralis conspicuè arcuatus, posticè rectior multumque acclivis. Area magna, plicâ umbonali depressâ creno-costatâ definita. Lunula sublævigata, sulco circumscripta.—Minute, rounded ovate-conic, tumid or ventricose, glossy ivory-white, barely gaping even posteriorly, devoid of indented ray or raised umbonal ridge, concentrically ribbed throughout (dorsal areas excepted); ribs narrow, prominent, numerous, only as broad as the intervals, which are smooth in the middle and rather obscurely creno-lyrated at each extremity. Sides very nearly equal; anterior one the shorter, peculiarly broad, rounded; posterior one abruptly and sharply acuminate, its tip very short, subcentral, scarcely, if at all, recurved. Front dorsal slope short, plano-convex, rather decided: hinder dorsal decided, straightish. Ventral margin peculiarly arcuated, straighter and much rising behind. Lunule defined by a sulcus, either smooth, or with only fine raised wrinkles: escutcheon large, defined by the creno-costated projection of the posterior ridge. Teeth rather numerous on either side.—Of this little *Leda* I have seen but

two perfect individuals (Mus. Cuming), which I have carefully compared with the larger known species from suspicion of their being immature. In the larger and apparently adult one, the front dorsal area is traversed by a kind of interrupted flexuous continuation of the ribs: this sculpture is not perceptible on the younger example. The dorsal lips protrude.

48. *L. VITREA*, *D'Orbigny*, f. 170.—*T. perparva*, ovali-acuta, posticè repentè acuminata, subæquilateralis, alba, radii impressi expers, undique arcuè et concentricè costellata. Margo dorsalis anticè convexus vixque declivis; posticè declivis, rectiusculus, sed demum incurvatus; ventralis multum arcuatus, posticè autem rector multumque acclivis. Area magna, concava, angulatim definita, longitudinaliter lamelloso-rugosa. Lunula transversim costellata, aliter inconspicua. Dentes magni, utrinque satis subæqualiterque pauci.—Peaked-oval, more or less ventricose, scarcely at all gaping, snow-white, glossy, not pellucid, without anterior indented ray or marked umbonal ridge. General surface most closely, evenly, and prominently costellated throughout; the costal interstices mere simple sulci. Sides very nearly equal: the anterior, if either, the longer, slightly tapering to a rounded extremity: posterior side quickly and simply acuminated, its tip sharp and subcentral. Front dorsal slope slight, convex: hinder dorsal slope decided, nearly straight, eventually incurved. Ventral margin, for the most part, much arcuated, yet straightish and rising considerably behind, without marked posterior retusion. Escutcheon large, rather excavated, lamellately wrinkled lengthways, sharply angulated at its circumference. Lunule transversely costellated, otherwise ill-defined. Hinge-margin broad; the large teeth nearly equally (and but moderately) numerous on either side of the extremely minute cartilage-pit.—*D'Orbigny's* types in our national collection have been the source of this description.

49. *L. JAMAICENSIS*, *D'Orbigny*, f. 173.—*T. minima*, subæquilateralis, subovato-rostrata, ventricosa, radio impresso lato antico plicâque umbonali angulari (retusionem profundam sequente) conspicuè ornata, undique costellis interstitiisque latioribus concentricè rugosa. Extremitas rostri subiti valde prominens multumque acutangularis. Margo ventralis arcuatus, bisinuatus. Area magna, subduplex; supernè sublongitudinaliter corrugata; infernè concava, lamelloso-costata, carinâ umbonali circumscripta.—Beaked-subovate, minute, ventricose, whitish, more or less glossy, with a very conspicuous broad indented anterior ray and a more or less carinately angular umbonal ridge preceded by a deep

retusion. General surface concentrically wrinkled throughout; the ribs even, and narrower than their intervals. Sides equal or nearly so; front one attenuately rounded at its extremity; hinder one rapidly beaked, its peculiarly prominent tip very acutangular, and rather below than above the middle. Dorsal slopes moderate, at first straightish; the hinder one eventually incurved and more decided. Ventral margin arcuated, straighter behind, sinuated by the two retusions. Escutcheon large, almost longitudinally wrinkled in the middle, concave at the circumference (where it is lamellately ribbed), and carinately defined by the umbonal ridge, which is subimbricated by the flattened ribs. Hinge-margin broad: teeth not very numerous, rather more in front than behind the extremely minute triangular cartilage-pit.—The types of this very small, yet distinct, species are preserved in our national collection. In one of them the costal intervals exhibit manifest traces of radiating sculpture. The lunule we cannot clearly distinguish.

50. *L. CRISPA*, *Hinds*, f. 107, 108.—*T. parva*, *æquilateralis*, *ventricosa*, *subovato-rostrata*, anticè sulco conspicuo radiata, posticè lirâ interruptâ radiante retusionem subitam præcedente ornata, liris subinclinatis (quarum interstitia postica sunt clathrata) concentricè sculpta. Extremitas rostri recurvata, obtusè acuminata. Margo dorsalis anticè vix declivis; ventralis in medio et anticè arcuatus. Area magna, rugis arctis concentricè costellata, duplex, infernè profundè excavata. Lunula angusta, lineâ circumscripta, transversim costellata.—Beaked-subovate, ventricose, gaping at the posterior tip, with a conspicuous broad indented ray in front, and, after a fine interrupted radiating lyra, a fang-shaped abrupt sinking of the surface posteriorly, the concavity of which gives prominence to the umbonal ridge. General surface concentrically costellated throughout; the riblets somewhat shelving, about as broad as their intervals, which are radiatingly lyrated at the posterior end. Sides equal or very nearly so: anterior extremity tapering, rounded: posterior side beaked, the tip bluntly peaked, recurved, subcentral. Front dorsal slope slight, plano-convex: hinder dorsal slope moderate, at first straightish, abruptly incurved at the termination. Ventral margin arcuated and externally crenulated in the front and middle, straighter and rising behind, indented before the posterior ridge. Lunule narrow, linearly defined, cross-barred: escutcheon large, with close concentric flexuous costellar wrinkles, double, the exterior being broadly and deeply excavated.—The only specimen known to me, which now belongs to Mr. Metcalfe, who purchased Mr. Hinds's collection when he quitted England, has no epidermis; its ribs

become finer and peculiarly approximate near the ventral margin. The specimen referred to in the 'Zoological Proceedings' as in Mr. Cuming's Museum, proves essentially distinct.

51. *L. HINDSII*, *Hanley*, f. 102.—*T. parva*, subæquilateralis, angustè ovato-acuta, anticè plicâ sulcoque lato radiata, posticè costâ umbonali carinatâ, superficiem lævigatam superiorem sequente, munita, alibi concentricè costellata; interstitia liris minutis undique decussata. Extremitas postica acuminata, vix recurvata. Area magna, concava, arcuè longitudinaliter costellato-striata; interstitia impressa punctulata. Lunula parva, transversim tuberculata.—Very small, subequilateral, pointed, ovate-oblong, more or less ventricose, only gaping at the hinder tip, with a conspicuous broad anterior indented ray and fold, white, concentrically costellated, except a smooth upper space before the keeled or sharply angulated umbonal ridge; riblets regular and numerous, scarcely as broad as their intervals, which are everywhere traversed by minute radiating lyræ. Anterior extremity attenuatedly rounded: posterior side, if either, the longer, simply and sharply acuminated, the tip subcentral, acutangular, scarcely, if at all, recurved. Dorsal slopes moderate; front one convex; hinder one straightish or subrefuse. Ventral margin arcuated in the front and middle, rising at both ends, straighter behind. Lunule small, narrow, subgranosely cross-barred: escutcheon large, concave, crowded with longitudinal costellar striæ, whose intervals appear punctulate from the minute transverse sculpture. About a dozen teeth on either side of the minute cartilage-pit.—Mr. Hinds had confused this rare little shell (of which Mr. Cuming, Mr. Metcalfe, and myself, each possess a single individual) with his *N. crispa*, which name has been retained for the delineated species. An incipient ridge almost renders the larger dorsal area a double one. I have seen no epidermis.

52. *L. EXCAVATA*, *Hinds*, f. 104, 105.—*T. latè ovato-rostrata*, subæquilateralis, ventricosa (vel tumida), anticè latè rotundata, costâ umbonali prominente angustâ ornata, lamellis concentricis (quarum interstitia latiora sunt haudque insculpta) undique costata. Extremitas rostri subiti perangusta, obtusè acuminata multumque recurvata. Margo dorsalis posticus declivis, incurvatus; ventralis anticè multum arcuatus, posticè valde acclivis. Area maxima, excavata, supernè longitudinaliter costellata. Lunula transversim costellata.—Of a rather oblique sharply-beaked abbreviated ovate shape, ventricose or tumid, with a narrow sharply elevated umbonal ridge (preceded by a slight retusion)

which is crossed by the numerous regularly disposed sublamellar concentric ribs that evenly traverse the entire surface except the dorsal areas, and a smooth nuclear region: their intervals, which are rather broader than the ribs, unsculptured, except where a few raised lines indistinctly and partially margin the broad shallow rudimentary anterior indented ray. Sides nearly equal: front extremity broadly and bluntly rounded; hinder side abruptly beaked, the tip very narrow, remarkably cocked-up, bluntly acuminate, above the middle. Front dorsal slope rather slight, short, plano-convex; hinder dorsal slope decided, incurved. Ventral margin much arcuated in front, straighter and much rising behind, retuse before its posterior termination. Lunule well defined, cross-barred by riblets: escutcheon very large, excavated, smooth at the circumference, costellated lengthways near the beaks. Hinge-margin very broad, teeth numerous, especially in front. Cartilage-pit extremely minute, triangular. Epidermis unknown.

53. *L. NICOBARICA*, *Chemn. amended by Bruguière*, f. 7.—*T. inæquilateralis*, oblonga, posticè lata et supernè obtuse subcuneiformis, pallidè fulva, striis densis subobliquis (nisi posticè supernè) undique sculpta. Margines dorsales vix declives. *Areæ dorsales angustæ, definitæ, dentes utrinque permulti*.—Oblong convex or subventricose, devoid of umbonal ridge, pale-tawny, closely graven with obliquely concentric striæ, which do not extend to the hinder triangle. Extremity of the anterior side, which occupies nearly three-sevenths of the total length, unsymmetrically rounded. Posterior side rather tapering, bluntly obversely subcuneiform; the extremity broad, convex, and above the middle, with a long shallow dorsal notch. Dorsal slopes very slight, nearly straight. Ventral margin arching up in front, then convex or subarcuated, straighter behind: posterior edge oblique, somewhat convex, yet a little retuse in the middle. Dorsal areas narrow, but well defined. Cartilage-pit broadly triangular: teeth numerous on both sides.—Although long known and often described, I have never met with this species in good condition. The teeth seem to average about eighteen on one side and twenty on the other. Of the three names bestowed by Chemnitz I have preferred *Nicobarica*, because the other two are deceptive; for the shell is neither smooth nor transparent. I doubt whether Spengler ever really published his Illustrated Catalogue.

54. *L. SEROTINA*, *Hinds*, f. 19-21.—*T. subinæquilateralis*, ventricosa, angustè oblonga, nisi supernè posticè sulcis remotis sub-

inclinatis concentricè sculpta. Extremitas postica sensim attenuata, haud rostrata, supernè angulata eminentiorque. Margo dorsalis uterque vix declivis, anticè convexiusculus, posticè rectiusculus; ventralis ad extremitatem posticam subito acclivis. Area lanceolata, acutè definita, sublævigata.—Elongated-oblong, more or less ventricose, only compressed on the convex-surfaced posterior triangle, which (as well as, occasionally, the hinder umbonal region) is devoid of the distant concentric subimbricating sulci which elsewhere traverse the highly polished pale mud-yellow exterior. Anterior side rather short, filling about three-sevenths of the total length, unsymmetrically rounded. Posterior side gradually attenuated, not beaked, angulated and more prominent above, with a slight dorsal notch or sinus: posterior edge convex, oblique. Dorsal slopes trifling; front one convex, or plano-convex; hinder one straight or subretuse. Ventral margin arching obliquely upwards in front, convex behind, bending abruptly up at its termination. Escutcheon lanceolate, carinately defined, more or less smooth. Cartilage-pit sunken, triangular. Teeth numerous.—In the variety *lepidula*, the hinder side is more gradually attenuated to a slightly more slanting tip, and the sulci are partially absent: in the form *serotina* the latter traverse the whole middle area, and the lunular region is slightly more prominent.

55. *L. LEPIDULA*, *A. Adams*, f. 6.—*T. tenuis*, *L. tenella* similima, sed major, magis expansa, et extremitate posticâ obtusiore minusque obliquâ; cute pallidè olivaceo-cinereâ induta, plicæ umbonalis omnino expers. Margo dorsalis anticus ad extremitatem convexus. Areæ dorsales inconspicuæ. Dentes utrinque permulti.—Most closely resembling *tenella*, but larger, rather less inequilateral, more spread and less ventricose in proportion. The valves are thin, and gape at both extremities, the epidermis is of a very pale olivaceous ash-colour; the ventral margin, in the adult, sweeps almost uninterruptedly, without central retusion, to the hinder extremity, which is blunter and less oblique than in *tenella*. There is not the least trace of an umbonal ridge. The front dorsal edge is decidedly convex at the extremity. The beaks are peculiarly small, and not all prominent. Dorsal areas inconspicuous. Inside bluish-white, subiridescent: cartilage-pit small, triangular: teeth very numerous on both sides, peculiarly narrow-based, and elevated.

56. *L. TENELLA*, *Hinds*, f. 15.—*T. inæquilateralis*, ovali-subrhombea, anticè infernè valde hians, posticè supernè rotundato-angulata, eburnea, striolis arctis, anticis longitudinalibus, mediis

obliquis, posticis radiantibus, minutissimè sculpta. Margo dorsalis utrinque vix declivis, anticè brevis et convexiusculus, posticè subretusus; ventralis in medio subretusus, demum rectiusculus et obliquè subangulatim acclivis. Lunula tenuiter striolata, perspicuè definita, major quam area angustissima.—Oval-subrhombic, small, subventricose at the umbonal region, gradually compressed behind, ivory-white (sometimes of a yellow cast), glossy, smooth to the eye, but under a powerful glass most minutely and closely striolate; the extreme front striolæ nearly concentric, the next sloping downwards and backwards, the hinder, which do not, however, extend to the extreme verge, radiating, and, if possible, still finer. Extremity of the anterior side, which occupies about two-fifths of the total length, and gapes considerably below, unsymmetrically rounded. Posterior side neither beaked, nor much attenuated, but with a rounded-off angle above; the hinder triangle not defined by a distinct umbonal ridge, but well marked near the umboes by the sudden decrease of the general convexity. Front dorsal slope slight, short, plano-convex: hinder dorsal edge scarcely sloping, at first subretuse, eventually plano-convex. Ventral margin obliquely arching upwards in front, subretuse in the middle, then convex and meeting the dorsal edge in an oblique and straightish line. Escutcheon peculiarly narrow (obscurely grooved?). Lunule larger, well defined, finely striolate lengthways.—The epidermis is extremely thin, and somewhat iridescent.

Sect. II., forming the Subgenus YOLDIA.

57. *L. LANCEOLATA*, *James Sowb.*, f. 12.—T. subovalis, anticè semielliptica, posticè obtusè rostrata et paululum brevior, convexa, obliquè striata, cute nitidâ olivaceâ induta. Margo ventralis anticè arcuatus, posticè convexus et multum acclivis. Area magna, abruptè impressa.—Suboval, not very strong, convex, gaping at both ends, covered by a strong glossy (often dark) olive cuticle, marked lengthways with moderately distant flexuously slanting striæ, which join some remote concentric striæ, that run from the front dorsal edge, along the obscure and very shallow anterior indented ray, and cease posteriorly at the broad smooth site of an umbonal ridge. Front side slightly, yet decidedly, the longer, semielliptical (the upper and lower slopes being almost symmetrical); hinder side bluntly beaked, the almost subtruncated tip (which in the adult shell is higher than the middle) broad, slightly upturned, more prominent above. Hinder dorsal slope moderate, at first convex, then incurved. Ventral margin arched in front, merely convex but much rising behind, not retuse pos-

teriorly. Hinder dorsal area large, smooth, lanceolate, much pouting, although so abruptly impressed at its circumference that it seems angularly defined by the higher level of the general surface. No lunule. Cartilage-pit very large, broad, cochleariform. Front teeth much the more numerous.—The ‘Mineral Conchology’ was published before the ‘Animaux s. Vertèbres,’ and long before the ‘Zoological Journal.’

58. *L. AMYGDALEA*, *Valenciennes*, f. 8, 10, 11.—*T. subæquilateralis*, elongato-oblonga, anticè angustè rotundata, posticè vix brevior et subtruncato-rostrata, sublævigata, cute nitidissimâ induta, radio utrinque impressa. Margo dorsalis posticus leviter declivis, vix subretusus; ventralis anticè arcuatus, in medio subrectiusculus, posticè conspicuè acclivis. Area haud impressa, vix definita.—Elongated-oblong, fragile, merely convex, subequilateral, yet longer in front, gaping at both extremities, with a shallow indentation radiating from the acute beaks (which are reflected and by no means prominent) to both ends of the ventral margin, and obsoletely sinuating them, narrowly rounded in front, subtruncately beaked behind (posterior lip convex), covered with a polished cuticle which is brownish-olive, greenish-olive, or pure olive, in rather broad lighter and darker zones, smooth, except ventrally, where the surface is coarsely and remotely wrinkled concentrically. Dorsal edges little sloping; the front one convex, the hinder one barely refuse. Ventral edge retusely straightened in the middle, much arcuated in front, convexly rising behind. Escutcheon lanceolate, not sunken, nor sharply defined, merely indicated by a cessation of the convexity, its edges pouting; lunule wholly obsolete. Interior bluish-white: teeth very numerous.

59. *L. LIMATULA*, *Say*, f. 9.—*T. amygdalæ* assimilis, cute autem viridi, lateribus æquis, extremitate rostri cuneiformis angustâ, et areâ acutè definitâ.—Allied to *amygdalea*, but more equilateral, with the posterior indentation inconspicuous, the cuticle light green (with an occasional linear darker zone of growth), the beak more decided and cuneiform, with its tip narrower, upturned, and not at all truncated, the anterior extremity more broadly rounded, the ventral margin more rising posteriorly. Escutcheon sharply defined by the very abrupt cessation of the general convexity. Lunule linear, perceptible. Teeth numerous on both sides (often 28–20).

60. *L. ARCTICA*, *Gray*, f. 5.—*T. ovalis*, convexa, lævis, subæquilateralis, cute nitidâ olivaceâ zonisque saturatoribus ornata. Extremitas lateris postici brevioris et obtusè acuminati rotun-

dato-subtruncata. Margo dorsalis anticus arcuatus, declivis; posticus rectiusculus, vix declivis. Margo ventralis subarcuatus, utrinque subretusus. Areae dorsales laud circumscriptæ.—Oval, convex, yet compressed behind, much gaping at the front ventral margin, and less so posteriorly, with an almost imperceptible umbonal ridge, clothed by a highly polished olive epidermis, whose zones of increase are more intense or blackish, smooth, except for the wrinkles of growth. Anterior side slightly the longer, almost symmetrically rounded: posterior side bluntly peaked, rounded-subtruncate at the extremity, which is subcentral, but projecting more above the middle. Front dorsal edge arcuated, and moderately sloping: hinder dorsal edge straightish, and not much sloping. Ventral margin subarcuated, but with a slight anterior retusion, and a still more trifling posterior one. Dorsal areas undefined; the hinder dorsal lips pouting.

61. *L. MYALIS*, *Couthouy*, f. 18.—*T. speciei præcedenti assimilis*, sed latere antico longiore minusque rotundato, extremitate lateris postici minus rostrati magis truncatâ, et areâ magnâ et acutè circumscriptâ.—Resembling the last, but with a well marked large escutcheon, that is sharply defined by its abrupt retusion. The lunule, too, though indistinct, is wrinkled by sulci. There is no vestige of an umbonal ridge, and the posterior compression is less marked. The anterior side is decidedly the longer, and blunter (less rounded) at its extremity: the hinder termination is less peaked and more truncated, the extreme projection is, for the most part, above the middle. The epidermis, which ranges from yellowish-olive in the young to dusky-olive in the adult, is less polished. The front dorsal edge is straighter: the ventral margin rather less arched, and the retusions are still less apparent. The cartilage-pit is broadly triangular; the teeth numerous on either side.*

62. *L. WOODWARDI*, *Hanley*, f. 17, 22.—*T. pertenuis*, valde compressa, valde inæquilateralis, subelliptica, posticè brevis et

* I am unable to procure a specimen of the *N. Gouldii* of Dekay (New York Moll. p. 180, f. 221), which is said to resemble this species in general form! but to differ in the number of its teeth and in the posterior side not being angular. I condense its description, which was derived from one individual now in the State collection.—

Thin, ovate, subequilateral, with an olive-green epidermis, which has a few paler concentric lines, that become still lighter behind; with faint concentric striæ: front dorsal margin slightly curved: posterior margin slightly beaked, with three or four imbricated striæ on the sides, extending from the beaks to the margin, where the imbrications are most apparent. $\frac{4}{5}$ — $\frac{2}{5}$. Long Island Sound, New York. Eighteen teeth were present in each valve.

rotundato-acuminata, radio nullo impressa, sublævigata, cute nitidissimâ validâ flavescence-olivaceâ induta. Margo dorsalis anticus vix declivis; posticus declivis, subrectus; ventralis anticè arcuatus et multum acclivis. Nates acutissimæ, haud autem eminentes. Arcæ dorsales haud definitæ: lunula planulata: arcæ labia carinato-protrusa.—Somewhat elliptical, very inequilateral, much compressed, covered by polished yellowish-olive strong epidermis, devoid of umbonal ridge or anterior ray, smooth, except for the wrinkles of increase. Anterior side much produced, its extremity somewhat tapering, unsymmetrically rounded. Posterior side short, quickly tapering to a rounded peak which lies rather above than below the middle. Front dorsal slope almost horizontal, at first straightish, eventually convex. Hinder dorsal slope moderate, straightish. Ventral margin obliquely arching up in front, merely broadly convex in the middle, subarcuately rising behind. Beaks peculiarly sharp, yet not prominent. Dorsal areas undefined; the front one flattened, sometimes impressed; lips of the escutcheon carinately pouting. Teeth rather few (about nine and twelve at most) on either side of the cartilage-pit, which latter is depressed, and has its base rounded.—There is some faint trace of an indented ray near the hinder extremity.

63. *L. SAPOTILLA*, Gould, f. 16.—*T. æquilateralis*, subventricosa, lævis, subovalis, posticè obtusè acuminata et paullulum subrostrata, cute politâ luteo-subvirescente induta. Margo dorsalis anticus arcuatus, vix declivis; posticus rector, leviter declivis; ventralis anticè subito et obliquè acclivis, posticè subsinuatus. Arcæ dorsales haud definitæ. Nates haud eminentes.—Suboval, subventricose at the umboes, only slightly gaping at the extremities, pure white under a polished fugacious oil-yellow cuticle, smooth, or at most with wrinkles of increase. Sides equal or very nearly so; the anterior, if either, the shorter, unsymmetrically rounded; the posterior bluntly peaked, and, from the slight ventral flexure, a little subrostrated, the tip rounded. Front dorsal edge arched, scarcely sloping: hinder one straighter, a little sloping. Ventral margin a little convex in the middle, abruptly and obliquely ascending in front, convexly rising behind, forming a shallow sinus near the extremity. Dorsal areas undefined. Teeth numerous (about eighteen) on each side.*

* I have not seen the fry of this shell, but suspect it must somewhat resemble a species of which I am unable to procure a specimen, the—

L. OBESA, *Stimpson Proc. Bost. Nat. Hist. Soc.* iv. p. 113; *Shells N. Engl.* p. 10, pl. 2, f. 1).—“*T. parva*, tenuis, ovalis, inequilateralis, posticè longior, epidermide nitida, tenuistriata; apicibus parvis; margine ventrali modicè arcuato; arcola

64. *L. EIGHTSII*, *Couthouy*, f. 164.—*T. convexa*, ovalis, posticè brevior et abbreviato-subrostrata, concentricè plicato-corrugata, cute validâ olivaceo-nigrescente induta. Extremitas postica sub-obliquè obtusa. Margo dorsalis posticus declivis, subretusus. Area haud definita, externè subconcava. Lunula planulata. Dentes pauci.—Oval, merely convex, gaping at both ends, much so posteriorly, less so (and ventrally) in front, covered by a shining blackish-olive strong cuticle, concentrically marked by rather distant depressed, yet very manifest, pliciform wrinkles. Anterior side occupying about four-sevenths of the total length; its upper and lower slopes, the former of which is decided and subarcuated, the latter much rising, almost symmetrical; its tip (in the adult) narrower and less rounded than the broad extremity of the slightly beaked hinder side. Posterior dorsal slope decided, eventually retuse. Ventral margin everywhere arcuated, not distinctly retuse posteriorly. Front dorsal area flattened, manifest. Lips of the escutcheon, which is not sharply defined, but gradually concave at the circumference, pouting. Interior bluish-white. Only about seven teeth on either side of the cartilage-pit, which is very large, and with a rounded base.—In the only adult example known to me (belonging to Mr. Metcalfe) there is present in one of the valves, towards the lower margin, a pencil of regular closely disposed radiating striæ, and in the other of interrupted grain-like lines. A perceptible, yet almost obsolete, broad shallow indented ray is manifest in both valves.* Although stated by Jay to have been published in the 'Annals of the Lyceum,' no description of it is to be met with in that work.

65. *L. JAPONICA*, *A. Adams*, f. 14.—*T. subovalis*, posticè brevior et abbreviato-subcuneiformis, lævis, subventricosa, cute politâ cinereo-virescente vel pallidè olivaceo-flavâ induta. Margines dorsales vix declives; anticus subrectus; posticus productus, incurvatus. Margo ventralis in medio subretusus, utrinque convexus et valde acclivis. Umbones latiusculi, haud multum eminentes. Area angustissima, vix retusa, acutè definita. Dentes utrinque

parum conspicua; dentibus anticis 10, posticis 12, parvis. 0.22–0.12." Massachusetts Bay, in deep water. Narrower and more inflated than the young of *Thraciaformis*.

* I am unable to identify the *N. limosa* of Philippi (Zeitschr. Malakoz. 1845, p. 75), whose shape must have approached this species. "Testa magna, ovato-oblonga, subcliptica, subæquilatera, compressa, lævi, epidermide castanea tecta; fovea ligamentali maxima, transversa, triangulari. Sinus Hudson." We are informed in addition that the description was drawn up from a single valve of *Yoldia*, that the dorsal arch was greater than the ventral one, the cartilage-pit was very large and prominent, and that there were from seventeen to twenty teeth on one side.

circiter viginti.—Suboval, more or less ventricose, compressed only at the hinder extremity, devoid of umbonal ridge, with a polished cuticle of pale greenish-ash, or very pale yellowish-olive colour, quite smooth. Anterior side occupying about three-sevenths of the total length, unsymmetrically rounded. Posterior side obversely and briefly subcuneiform, the tip well rounded and dorsal: hinder edge plano-convex. Dorsal edges scarcely sloping, the front one almost straight, the hinder one produced and incurved. Ventral margin subretuse in the middle, peculiarly and convexly rising at both ends. Escutcheon very narrow and elongated, barely retuse, carinately defined. Lunule indistinct, a little depressed. Interior subiridescent. Cartilage-pit moderate, spoon-shaped. Teeth about twenty on each side.

66. L. THRACLEFORMIS, *Storer*, f. 4, 13.—T. ovalis vel obovalis, posticè subrhomboidalis, ad umbones acutos ventricosa, subæquilateralis, marginem versus concentricè corrugata, plicâ umbonali munita, cute tenui vixque nitidâ induta. Margo dorsalis anticus brevis, leviter declivis; posticus incurvatus, haud declivis, cum margine postico angulum obtusè formante. Extremitas postica supernè eminentior, infernè obliquè rotundata. Margo ventralis anticus valde acclivis et obliquè arcuatus. Area concava.—Oval or oboval, subrhomboid posteriorly, ventricose at the umbonal region, gradually declining in convexity beyond the gradually developed umbonal ridge that parts off, in the adult, nearly three-sevenths of the entire surface, much gaping at both extremities, reddish-white under a rather dull fugacious epidermis, that ranges in colour from olivaceous-ash to (more rarely) olivaceous-brown; coarsely and remotely wrinkled concentrically towards the outer margin. Anterior side a little the shorter, unsymmetrically rounded, its dorsal edge short, slightly convex, and a little sloping. Hinder dorsal edge incurved, horizontal, forming a blunt angle with the posterior edge, which is arched above but more rectilinear and obliquely sloping inwards below, so that the upper corner is far more prominent than the rounded lower extremity. Ventral margin somewhat convex in the middle, obliquely arcuated and much rising in front, with an occasional sinus before the umbonal ridge. Lips of the escutcheon, which is concave and linear-lanceolate, pouting. Cartilage-pit very large: pallial sinus profound, and very large. Teeth not numerous (often fifteen to seventeen).—The chief lateral projection is rather below the dorsal line. The unboes are very prominent in young individuals, which are quite smooth, are covered with a shining epidermis of a pale greenish-ash colour, exhibit a more or less arched ventral margin,

are devoid of any umbonal ridge, and terminate posteriorly in a rounded peak.

67. *L. FRIGIDA*, *Torell*, f. 168, 169.—“*T. ovalis*, prope semilunaris, subæquilateralis, anticè rotundata, posticè subrostrata, compressa; tenuis, diaphana, virescens, nitida, concentricè striolata, posticè argutius. Margo dorsalis modicè convexus, umbonibus prominulis, ventralis semicircularis, posticè obtusè angulatus, leviter impressus; intus opaca, linea marginali albida obducta; denticuli utrinque septem crassiusculi, angulati.”—Unable to procure this Spitzbergen shell (possibly immature, being only the fifth of an inch long), I have copied both figure and description from *Torell*.

Sect. III., forming the Subgenus *PORTLANDIA*.

68. *L. GLACIALIS*, *Gray, as of Leach*, f. 30, 31.—*T. ovali-acuta*, ventricosa, vix hians, æquilateralis, anticè semielliptica, posticè obversè cuneiformis, cutè luteâ olivaceo-flavescente vel olivaceo-tenebrosâ induta, rugis minutis arctissimis, undulatis, subgranosis, concentricè lirata. Margo dorsalis posticus vix declivis; ventralis anticè arcuatim acclivis, deinde subretusus, posticè subangulatum acclivis. Nates valde eminentes. Regio dorsalis postica magna, latè concava.—Peaked oval (at times much produced, at times abbreviated), ventricose, scarcely, if at all gaping, without anterior indented ray, with a rather glossy thin epidermis, that ranges in tint from bright yellow, or yellowish-olive (in the elongated forms) to dusky-olive (in the broader individuals); most closely and finely shagreened by raised concentric undulated subgranular wrinkles. Sides equal; the front unsymmetrically semielliptical, the hinder obversely wedge-shaped, its broad extremity being subtruncated from above inwards. Front dorsal edge just at first horizontal, then more or less arched and sloping: hinder dorsal edge but little sloping, at first somewhat retuse, then convex. Ventral margin arching up in front, subretuse behind the middle, subangular at its junction with the retuse posterior margin. No defined lunule or lozenge, but a wide and large concave hinder dorsal region marked out by an obscure rounded umbonal ridge, the surface before which is somewhat planulate. Cartilage-pit almost perpendicular, not large, triangular (with an arched base). Teeth moderately numerous (ten or twelve) on either side.—The typical or earlier known form is five-sixths of an inch long, and seven lines broad: the elongated variety *Portlandica* averages eleven-sixteenths of an inch in length and hardly more than three-

eighths of an inch in breadth. There is a most minute radiating sculpture which produces the peculiar shagreen. I do not think Leach ever published the species.

69. *L. LUCIDA*, *Loven*, f. 23, 24, 25.—*T. perparva*, ovalis vel subovata, subæquilateralis, subventricosa, sublævigata, posticè striis pertenuibus longitudinaliter sculpta, cute politâ cinereo-flavescente induta. Extremitas postica supernè eminentior et obliquè subrectangularis. Margo dorsalis anticus convexus, declivis; posticus vix declivis, demum subretusus. Nates neque prominentes nec acutæ. Aræ dorsales haud definitæ.—Very small, oval or subovate, subventricose, scarcely, if at all, gaping at either end, without umbonal ridge or indented ray, clothed with an iridescent, polished, ashy-yellow epidermis, smooth to the eye, but under a lens seen to be graven posteriorly with concentric or longitudinal scratches, which are distant below, finer and closer above. Extremity of the slightly shorter anterior side rather attenuatedly rounded: posterior end obliquely subrectangular above, its tip much above the middle; lower posterior edge convex, and more frequently oblique. Front dorsal slope moderate, convex or subarcuated: hinder dorsal slope very slight, plano-convex, subretuse at the extremity. Ventral margin convex in the middle, arching upwards at both ends. Dorsal areas wholly undefined, the surface of the hinder one a little flattened. Teeth rather, and nearly equally, numerous on either side of the very minute and shelving cartilage-pit.—In the oval form, the hinder extremity is at times subbiangular, the lower corner being, however, rounded off.

70. *L. PYGMÆA*, *Munster*, f. 26, 27.—*T. perparva*, lævis, valida, ventricosa, vix hians, subovata, posticè rotundato-acuminata, radii impressi expers, cute nitidissimâ olivaceo-flavâ vel olivaceo-cinereâ induta. Margo dorsalis posticus declivior, subrectus aut retusus. Margo ventralis utrinque subæqualiter acclivis. Nates eminentes. Aræ dorsales haud definitæ. Dentes magni, utrinque circiter 12.—Very small, tumid or ventricose, scarcely, if at all, gaping, variable as to shape, being ovate-oblong (rarely), subovate, ovate, or ovate-trigonal, with the dorsal slopes (which seem to be normally rather slight) ranging consequently from slight to decided, and the ventral margin (which rises in a curve nearly equally at both ends and is devoid of posterior retusion) from slightly (in the elongated form) to greatly (in the trigonal variety) arcuated; devoid of indented ray, defined dorsal areas, or umbonal ridge, with a highly polished olivaceous-yellow or ashy-olive some-

what iridescent epidermis, everywhere smooth, except for the wrinkles of increase or more distant furrows of growth. Anterior side rather the shorter, a little narrowed and subangulately rounded at its extremity, its dorsal slope straightish or plano-convex: posterior side rotundately peaked, its tip, which is somewhat disposed to turn up, in or below the middle, its dorsal slope, which is the more decided one, straightish or retuse. Hinge-margin broad; teeth large, about twelve on each side of the minute triangular cartilage-pit.

71. *L. RETUSA*, *Hinds*, f. 28, 29.—*T. perparva*, *valida*, *magis minusve ventricosa*, *vix hians*, *æquilateralis*, *posticè rotundato-acuminata*, *lævis* (*nisi anticè infernè*), *cute nitidâ subolivaceo-flavâ induta*. *Margo dorsalis posticus leviter declivis*, *magis minusve retusus*; *ventralis arcuatus*, *utrinque multum acclivis*. *Nates eminentes*. *Aræ dorsales haud definitæ*.—Very small; more or less ventricose, scarcely if at all gaping at either end, under a subolivaceous-yellow epidermis, polished ivory-white, devoid of indented ray or umbonal ridge, smooth, except at the extreme lower anterior extremity, where the surface is graven with a few distant shelving and somewhat slanting longitudinal scratches. Sides equal or very nearly so: front extremity subangulately rounded, tapering; hinder side rotundately peaked, its tip rather above than below the middle, a little upturned. Front dorsal slope moderate or rather slight, somewhat convex, straighter near the prominent beaks: hinder dorsal slope slight, more or less retuse. Ventral margin arcuated, much rising at both ends, rather more so behind, without posterior retusion. Dorsal areas wholly undefined. Hinge-margin very broad. Teeth rather, and nearly equally, numerous on either side of the minute shelving triangular cartilage-pit.

72. *L. ABYSSICOLA*, *Torell*, f. 167.—*T. ventricosa*, *lævis*, *angustè oblonga*, *cute politâ olivaceo-flavente induta*. *Extremitas lateris postici longioris sensimque attenuati satis angusta*, *sed rotundata*; *margo ejus dorsalis prope umbones tumidos prominentes rectus et subhorizontalis*. *Margo ventralis arcuatus*, *haud sinuatus*. *Aræ dorsales haud definitæ*.—Narrow-oblong, ventricose, scarcely gaping, with a shining olivaceous-yellow epidermis, smooth except for the wrinkles of growth, devoid of umbonal ridge or defined dorsal areas. Anterior side much the shorter (about two-fifths of the entire length), its extremity well rounded. Posterior side gradually attenuated to a rather narrow but well rounded tip: its dorsal edge straightish and subhorizontal near

the swollen and projecting umboes. Ventral margin arcuated, convexly rising, without retusion, at both ends. Inside almost pearly: cartilage-pit almost perpendicular, on either side of it about ten teeth.

73. *L. SULCIFERA*, *Reeve*, f. 165, 166.—*T. subæquilateralis*, subangustè ovata, nisi ad umbones gibbosos compressa, anticè rotundata, posticè obtusè rostrata et paululum flexuoso-concava; cute corneo-virente induta, sulcis remotis longitudinalibus vix insculpta.—Somewhat narrowly ovate, compressed, yet rather gibbous at the umboes, subequilateral, rounded in front, slightly flexuous-concave and bluntly beaked behind. Surface with distant superficial longitudinal grooves. Epidermis greenish horn-colour.—Never having seen this shell, the description is not original.

NUCULA, *Lamarck (restricted)*.

Gen. Char. More or less subtriangular, very inequilateral, closed at one and usually at both ends, clothed with an epidermis: umboes turned to the shorter side.* Inside pearly; margin sometimes crenulated: hinge-margin with a row of produced and pointed interlocking teeth on either side of the projecting support for the narrow triangular cartilage-pit, which slants to the longer side. No pallial sinus.

Sect. A. *Ventral margin crenulated.*

1. *N. DECUSSATA*, *Sowerby*, f. 109, 110, 111.—*T. valida*, vix obliqua, longitudine latitudinem multo superante, ad umbones prominentes subrectangularis, subventricosa, cute luteo-virente induta, rugis lamellaribus concentricis lineisque elevatis densis radiantibus arcè et undique decussata. Margo ventralis crassè crenatus. Lunula satis magna, protrusa, externè subgranoso-corrugata, supernè lævigata. Area subplanulata, sæpius transversim plicato-corrugata (rugis ætate obsoletis).—Very variable in shape and degree of lateral inequality, nearly rectangular at the beaks, not particularly oblique, much longer than broad, subventricose, nearly evenly diminishing in convexity on either side,

* When there is neither a pallial sinus, nor an external ligament, it is usual to consider that side the posterior which contains the larger portion of the cartilage, and that the anterior towards which the beaks incline. The position of the animal in *Nucula*, however, compels me to term the shorter end the posterior. The words *lunula* and *escutcheon* are here used with their ordinary signification, and not as equivalent to front and hinder dorsal impression.

covered by a thin greenish oil-coloured epidermis, everywhere (near the slopes excepted) conspicuously decussated by irregularly concentric costellar or lamellar wrinkles, pairs of which often become confluent anteriorly, and close-set radiating raised lines. Anterior extremity somewhat tapering, chiefly projecting below the middle, rounded; posterior end rotundately subangulated below, its dorsal slope very decided. Ventral margin closely crenated within, more rising in front, at times much arcuated in the middle, at times (in the very inequilateral specimens) only slightly so. Lunular area rather large, pouting, more or less angularly defined, for the most part subgranosely wrinkled near the circumference, smoothish in the middle: opposite dorsal area rather flattened, usually obscurely barred with wavy pliciform wrinkles, which generally become obsolete with age. Teeth about twelve on the shorter side, and twice as many on the longer.—There are three known variations. The North British form, where the wrinkles are almost lamellar, and the shape is somewhat more ovate; the N. African form, where the wrinkles are costellar and shelving, and the shape triangular; and the Mediterranean form, where the sculpture is comparatively undeveloped and the form intermediate between the two previously indicated. Mr. Cuming possesses an aged example (seven-eighths of an inch in length) in which the radiating lines appear incised near the lower margin, and the smooth lunular area is devoid of the ordinary sculpture, projection, or definement.

2. *N. NUCLEUS*, *Lin.*, f. 121, 122, 159.—*T. obovato-trigona*, raro obliqua, satis ventricosa, valida, cute luteâ vel olivaceâ et nunquam nitidâ induta, nunquam colore radiata, in medio sublævigata, utrinque tenuissimè concentricè subplicato-corrugata et (posticè præsertim) minutissimè radiatim lirata. Extremitas brevior rotundato-obtusangularis, infernè eminentior. Margo ventralis satis argutè crenulatus, arcuatus, posticè acclivis. Nates prominentes, inclinatæ. Lunula nitida, concentricè corrugata, neque granis nec lineis radiantibus sculpta. Area aut lævigata aut concentricè sculpta.—Obovate-trigonal, almost always longer than broad, seldom oblique, strong, moderately ventricose, clothed with an epidermis that is never polished or colour-rayed: general surface smoothish in the middle but very finely concentrically and subpliciformly corrugated at both ends, and, under a lens, (particularly behind) perceptibly, though faintly, closely radiatingly lyrated. Inequality of the sides decided, yet not remarkable; extremity of the anterior side, which is produced and tapering, rounded off; its chief projection basal. Posterior end rotundately obtusangular,

and rather prominent below. Ventral margin rather finely crenated within, arched, rising posteriorly. Beaks prominent. Lunular area shining, rather obscurely, yet impressly defined, somewhat pouting, concentrically wrinkled, without radiating lines or granules. Opposite dorsal area smoothish or concentrically wrinkled. About twenty teeth on one side, and ten on the other.—The northern and southern forms differ to some considerable extent; the surface in the former is comparatively smooth, and its epidermis is yellowish; in the latter (or at least in the Mediterranean examples*) the epidermis is of a dusky-olive, the sculpture is much more decided, and the radiating lines often pervade the central portion likewise. Bruguière's description of his *A. margaritacea* (Hist. Nat. Vers., 109), for which *Arca nucleus* of Linnæus is indicated as a probable synonym, is rather generic than specific; he admitted but a single species of *nacreous Arca*, which he ascribed to St. Domingo, but referred likewise to England as a habitat, on the authority of Da Costa. As Petiver's rude figure (Gaz. pl. 17, f. 9) of the present species is cited by him as the most characteristic, we may fairly regard his *margaritacea* as, in the main, identical with the commonest of our known *Nucule*.

3. *N. STRIOLATA*, Adams, f. 129.—T. sp. præcedenti simillima, sed semper pallidè olivaceâ, magis obliqua, compressa, sublævigata (oculo autem armato undique striolis vix elevatis densè radiata); rugæ concentricæ obsoletæ et æqualiter diffusæ. Lunula haud definita.—Closely resembling *nucleus*, but more oblique, compressed, always of a pale-olive, smooth to the eye, but under a powerful lens the general surface everywhere densely radiated with scarcely raised striolæ: the concentric wrinkles obsolete and evenly diffused. Lunular area undefined.—The likeness to a young Mediterranean *nucleus* is most striking. Owing to the thinness of the epidermis there is an external iridescence around the lunular area.

4. *N. RADIATA*, Hanley, f. 123, 124.—T. *N. nucleo* simillima, sed major, longior, magis obliqua magisque inæquilateralis, radiis aliquando rubro-aurantiis nonnunquam fumosis picta, magis minusve compressa. Cutis nitidiuscula, olivacea, in junioribus olivaceo-lutea.—With the shape, sculpture, and general characters of *nucleus*, but larger, longer, more oblique, still more inequilateral

* I suspect that the *N. rugulosa* of Sowerby (Conch. Illust. Nucula, n. 28, f. 19, copied in Hanl. Rec. Bivalves, p. 171, pl. 20, f. 10) was constituted from this variety; at least, I know no species which so greatly resembles it. It is thus described:—"Ovate-triangular, with a greenish epidermis, covered with rugulose striæ; angles obtuse; anterior (i.e. posterior) slope with a central elevation; posterior (i.e. anterior) slope somewhat rounded; ventral margin very finely crenulated, 0.5."

(the beaks being almost terminal in the adult), and less prominent behind. More or less compressed, and under a not quite dull epidermis, that ranges in tint from olivaceous-yellow in the young to deep-olive in the mature, colour-rayed; rays for the most part narrow and smoke-coloured, sometimes (especially in the young) orange-red, and broader; sometimes painted with both colours. The lunule is elongated, but less prominent than in *nucleus*.—There is more posterior projection in the fry, but at that stage the elongated shape is peculiarly conspicuous and the rays more vivid.

5. N. CASTANEA, *A. Adams*, f. 130.—T. conspicuè obliqua, latitudine longitudinem æquante, compressa, cute luteo-castaneâ induta, haud radiata, sublævigata. Margo dorsalis anticus arcuatus, elongatus. Latus posticum fere nullum, infernè acclivitate repentinâ marginis ventralis multum arcuati et argutè crenulati obliquè excisum. Lunula valde prominens, bene definita.—Peculiarly oblique, about as broad as long, compressed, invested with a rather glossy, yellowish-chestnut epidermis, not colour-rayed, everywhere almost smooth, merely obscurely wrinkled concentrically, devoid of radiating or divergent sculpture. Anterior extremity narrowed, yet well rounded; front dorsal edge peculiarly elongated and arched. Posterior side scarcely any, obliquely cut off below by the abrupt ascent of the much arcuated ventral margin, which is finely crenulated within: lunular region peculiarly prominent and well defined.—Mr. Cuming and Mr. Metcalfe each possess a single specimen.

6. N. NITIDULA, *A. Adams*, f. 142.—T. obliqua, ovato-conoidalis, æquè lata ac longa, haud ventricosa, valde inæquilateralis; cute polita pallidè olivaceâ, zonisque nigro-cinereis cinctâ, induta, undique lævis. Margo ventralis crenulatus, valde arcuatus, posticè conspicuè acclivis. Latus anticum rotundato-subcuneiforme. Nates prominentes. Lunula subangulatim definita, multum eminens.—Oblique, ovate-conoidal, as broad as long, by no means ventricose, extremely inequilateral, with a polished pale olive-coloured epidermis, and dark grey zones, everywhere smooth. Ventral margin crenulated within, much arcuated, rising behind so as to obliquely round off the posterior corner. Extremity of the subcuneiform anterior side rounded, front dorsal slope very decided, much produced. Beaks acute, prominent, touching. Lunular area much projecting, subangularly defined.

7. N. NITIDA, *Sowb.*, f. 120.—T. ovato-trigona, satis ventricosa (in exemplis junioribus compressa), cute nitidissimâ olivaceo-cinereâ induta, nonnunquam lineis fumosis radiata, rugis subpliciformibus concentricis striisque radiantibus subobsoletis

utrinque sculpta, in medio sublævigata. Latus posticum conspicuè breve infernè angulatum eminensque. Margo ventralis crenulatus multum arcuatus, posticè satis repentè acclivis. Area dorsales tantum lineis incrementi rudè corrugatæ; lunula haud definita, haud prominens. Margo cardinalis subangustus.—Ovate-trigonal, subventricose (compressed when young), clothed with a highly polished ashy-olive epidermis, occasionally marked with smoke-coloured linear rays: with concentric subpliciform corrugations and very faint radiating striæ at the broader end, rather less manifest ones on the narrower end; intermediate surface nearly smooth to the eye, but under the lens (the epidermis being removed) marked with radiating incised lines. Lower extremity of the peculiarly short hinder side angularly prominent, dorsal slope abrupt. Anterior end subangulately rounded. Ventral margin crenulated within, much arcuated, rather suddenly rising behind. Beaks sharply prominent. Lunular area undefined, not prominent, and as well as the simple, somewhat flattened front dorsal region merely coarsely wrinkled by the lines of growth. Hinge-margin rather narrow: teeth as in *nucleus*.—The *N. argentea* of Brown (Illust. Conch. G. B., p. 85, pl. 33, f. 14, 15) is probably the fry of this species.

8. *N. PROXIMA*, Say, f. 118, 119.—T. subtrigona, valde inæquilateralis et obliqua, latitudine longitudinem fere æquante, valida, ventricosa, cute nitidâ olivaceo-cinereâ induta, sublævigata. Latus posticum infernè haud angulatum, acclivitate conspicuâ marginis ventralis crenati multumque arcuati obtusè excisum. Margo dorsalis anticus valde declivis, rectiusculus. Nates erosæ. Lunula haud prominens, sulco tenui (in adultis) circumscripta, haud divaricatim insculpta. Margo cardinalis latus.—*Var.* T. perobliqua, cute olivaceâ, lunulâ haud circumscripta.—Subtrigonal, very oblique, nearly if not quite as broad as long, ventricose, clothed with a thin glossy olivaceous ash-coloured epidermis, when adult smooth except for the pliciform wrinkles of increase, which are often conspicuous on the dorsal regions, and some very faint radiating striæ, which are most perceptible below posteriorly. Ventral margin crenated, much arcuated, much rising behind, so as to cut off without angularity the posterior corner. Front dorsal slope straightish, produced, very decided. Beaks almost terminal, peculiarly inflected, always eroded. Lunular region not prominent, defined by a thin groove (in the adult only), not divergently sculptured. Front dorsal area rather sunken. Hinge-margin broad; teeth remarkably high, curved, and sharp.—*Var.* More olive-coloured, peculiarly oblique; lunular region undefined.—

The surface, on the removal of the epidermis, appears faintly radiatingly striated, and the teeth, in the adult, are about twenty-two on one side and eleven on the other; these striæ are much more manifest in the fry, which are provided, as usual, with a much smaller number of teeth. All the specimens I have seen named "*radiata*, Dekay," appear to be the young of this species, but the furrow represented in his figure I have never descried (except as an accident of growth) in any *Nucula*.

9. *N. PAULLULA*, *A. Adams*, f. 131, 132.—*T. minuta*, perobliqua, subovata, longitudine latitudinem paululum superante, valde inæquilateralis, ventricosa, cute pallidè olivaceâ induta, undique sublævigata. Extremitas lateris antici producti subattenuati rotundata; latus posticum, acclivitate obliquâ marginis ventralis crenati et arcuati, infernè rotundato-excisum.—Minute, very oblique, subovate, not quite so broad as long, ventricose, moderately strong, very inequilateral, with a polished pale olive-coloured epidermis, everywhere smoothish, yet with irregular concentric incremental sulci: extremity of the produced and tapering anterior side rounded. Ventral margin crenated within, arched, rising behind so as to obliquely round off the posterior corner.—The same poor specimen has served Mr. Adams and myself for description, and no definite characters can be derived from it. Its beaks are eroded, but apparently much reflected: the lunular area is not either decidedly prominent or clearly defined.

10. *N. MITRALIS*, *Hinds*, f. 144.—*T. conoidalis*, valida, ventricosa (in exemplis adultis), lævis, cute nitidissimâ flavâ induta, valde inæquilateralis. Extremitas antica rotundato-subcuneiformis; postica infernè rotundato-excisa. Nates peracutæ, involutæ, eminentes. Area tuberculis transversim costellata. Lunula haud prominens, concavè definita. Cartilago perobliqua.—Longitudinally conoidal, ventricose when adult, with a polished olivaceous-yellow epidermis, smooth. Anterior side greatly produced, its extremity rotundately subcuneiform; ventral margin arched, crenated, and rising behind so as to obliquely round off the corner of the very short and nearly straight posterior side. Beaks very acute, prominent, involute, not touching. Front dorsal region barred across by short costellar tubercles that do not extend far from the but little curved margin. Lunular region excavately defined, not prominent: cartilage very oblique.—The typical form of *mitralis* is rather sharper at the beaks and more slender at the anterior tip than in the more swollen *gibba*.

11. *N. MARMOREA*, *Hinds*, f. 145.—"*T. elliptica*, solidula, al-

bida, sulcata; iris ad angulum planulatis; latere antico (*i.e.* postico) brevi, subacuminato; marginibus ventralibus minutè crenulatis. $2\frac{1}{2}$ lin. Straits of Malacca."—In default of a specimen, I am compelled to copy this brief description.

12. *N. SULCATA*, *A. Adams*, f. 127.—*T. obliqua*, subovata, longitudine latitudinem fere superante, crassa, undique ventricosa, cute olivaceo-cinereâ haud politâ induta, sulcisque inclinatim subaretis undique concentricè insculpta. Extremitas postica infernè rotundato-excisa. Margo ventralis crenatus, arcuatus. Sulci regionum dorsalium subobsoleti; interstitia striolis divaricatis minutis arcuè ornata. Lunula valde eminens. Nates sæpius erosæ. —Oblique, somewhat ovate, for the most part longer than broad, very strong, evenly ventricose, clothed with an unpolished olivaceous ash-coloured epidermis, grooved throughout; grooves concentric, shelving, rather close. Ventral margin more or less arcuated, crenated within, rising behind so as to rotundately cut off the posterior corner. Grooves of the dorsal regions somewhat obsolete; their intervals densely marked with most minute divergent striæ; lunular area much projecting. Beaks usually eroded. —The cartilage-support protrudes greatly, and slants but little. The teeth seem to average about sixteen and ten. Even the dorsal edges are crenulated, yet very delicately.

13. *N. PULCHRA*, *Hinds*, f. 146.—"*T. elliptica*, solida, sulcata; interstitiis transversim striatis; marginibus ventralibus crenulatis; cardine anticè (*i.e.* posticè) dentibus 9, posticè 27–29. 7 lin." —It is said by Mr. Hinds, from whose works both figure and description have been copied, to resemble the fossil *Duchastellii*, but to differ by its striated lunule and uninterrupted lamellæ.

14. *N. PISUM*, *Sowerby*, f. 133.—*T. minima*, valde inæquilateralis, satis ventricosa, subobliquè obovalis, cute pallidè olivaceâ vix nitidâ induta, rugis elevatis densis (quarum interstitia liris minutissimis posticè, et nonnunquam anticè, sunt decussata) undique (nisi ad umbones) concentricè sculpta. Extremitas postica infernè rotundato-excisa. Regionem dorsalem striis divaricatis minutissimè ornata. Margo ventralis multum arcuatus, argutè crenulatus. Lunula satis prominens, haud definita.—Very small, moderately ventricose, clothed with a rather glossy yet not polished pale or cinereous-olive epidermis, rather obliquely oval. General surface (the umbonal region excepted) densely wrinkled concentrically; the corrugations raised, narrower than their intervals, which (under a powerful lens) are, on the shorter side at least, obscurely and finely lyrated across: when highly magnified, too,

both the front dorsal region and the lunular area are manifestly though faintly and minutely marked with divergent striæ. Extremity of the produced anterior side rounded, its slope moderate. Posterior side excessively short, not angulated below, but cut off, as it were, in an oblique curve, by the much arcuated ventral margin, which rises behind and is finely crenulated within. Lunular area undefined, rather prominent.

15. *N. DECLIVIS*, *Hinds*, f. 147.—“*T. parva*, obliquè elliptica, solidula, epidermide tenui fuscâ induta; latere antico (*i.e.* postico) brevi; margine dorsali longè inclinato, ventralibus crenulatis. 2 lin. Hab.? (Mus. Belcher.)”—Unknown to me, but said to be closely allied to *pisum*, and still more oblique.

16. *N. CRENULATA*, *A. Adams*, f. 134, 135.—*T. N. exigua* assimilis, sed major, cute olivaceâ, sulcis propinquieribus, striis radiantibus subobsoletis, margine ventrali minus arcuato.—*Var.?* *Paytensis*. Sculptura nonnunquam ad umbones obsoleta; liræ radiantes, conspicuæ; lunula infernè paululum eminentior, aliquantumque angulariter planulata.—Resembling *exigua*, but larger, rather more tapering at the front extremity, and more rounded off at the posterior ventral corner; the epidermis olivaceous; the grooves much closer, the radiating sculpture almost obsolete; the ventral margin less arcuated.—The type (a single individual) looks like a large *exigua*, but is more compressed in proportion, and the sulci are much closer on its nuclear portion than upon that shell. The lunular area is neither impressed nor groove-defined.—*Var.?* *N. Paytensis*, *Adams*, *Proc. Zool. Soc.* 1856, p. 51. Sculpture sometimes obsolete on the umboes, the radiating lyræ very distinct; lunular area rather more angularly depressed, and slightly more projecting below (f. 160, 161).

17. *N. EXIGUA*, *Sowerby*, f. 136.—*T. minuta*, obliquè ovata, longitudine latitudinem multum superante, valida, ventricosa, nitidiuscula, pallidè lutescens, sulcis remotis inclinatorum striisque radiantibus decussatis undique concentricè sculpta. Extremitas antica rotundata, margo ejus dorsalis convexus. Latus posticum brevissimum, infernè obsoletè subangulatum, haud autem prominens. Margo ventralis crenatus, arcuatus, posticè acclivis. Regiones dorsales costellis, anticis remotis, posticis approximatis, transversim ornatae. Nates lunulaque haud eminentes.—Minute, obliquely ovate, decidedly longer than broad, ventricose, of a rather glossy yellowish-white: disks marked throughout with regular coarse concentric grooves, which are distant, shelving, and radiatingly decussated by finer striæ: dorsal regions barred across; the front costellæ dis-

tant, the hinder ones close. Ventral margin crenated within, much arcuated, rising behind. Anterior extremity well rounded, front dorsal slope convex. Posterior side very short, not at all projecting below, yet obsoletely subangulated. Neither beaks nor lunular region prominent.

18. *N. CASTRENSIS*, *Hinds*, f. 148.—T. elliptica, anticè (*i.e.* posticè) rotundata, epidermide olivaceâ induta; lineis divaricatis; marginibus ventralibus crenulatis; cardine anticè dentibus 5, posticè 11.

19. *N. MIRABILIS*, *Ad. and Reeve*, f. 114.—T. ovali-truncata, subventricosa, cute luteâ haud nitidâ induta, undique divaricatim arcuatè costellata; costellæ anticæ cum costellis posticis angulos acutos in medio testæ formantes. Extremitas postica infernè obliquè rectangularis. Margo ventralis utrinque acclivis, anticè arcuatus, posticè subsinuatus. Area haud circumscripta. Lunula magna, profunda, costellis parvis densisque transversim ornata, angulo circumscripta: angulus divaricatim sculptus.—Truncated-oval, subventricose, with a dull dirty-yellow epidermis, everywhere finely and somewhat arcuatedly ribbed: the front and hinder ribs, which are rounded and narrower than their intervals, diverging from each other at acute angles just behind the middle of the shell; a similar double divergence along the angular circumference of the large and strongly impressed lunule, which latter is barred across by much denser and smaller ribs. Anterior side produced, somewhat tapering, and well rounded at its extremity; its dorsal slope rather slight, convex. Posterior side short, obliquely rectangular below (in the adult). Ventral margin much arched in its anterior ascent, more or less retuse (with age) just before the end of its posterior ascent. No defined front dorsal area, but the ribs are there denser and more numerous. Umboes rather prominent; beaks obliquely coiled, recurved.

20. *N. DIVARICATA*, *Hinds*, f. 151.—“T. elliptica, anticè (*i.e.* posticè) excavata, subacuminata, posticè (*i.e.* anticè) rotundata; lineis divaricatis striata; marginibus ventralibus crenulatis; cardine anticè (*i.e.* posticè) dentibus 7, posticè (*i.e.* anticè) 22–24.”—Were it not that the described number of the teeth is much greater in the smaller shell, I should have believed this to be an immature *mirabilis*.

21. *N. MALABARICA*, *Hanley*, f. 152.—T. minuta, trigona, haud elongata, satis obliqua, tantum ad umbones angustos et elevatos ventricosa, supernè rectangulata, nitida, undiquè concentricè costellata: sulci interstitiales liris radiantibus exilibus ornati. Latus

posticum (pro genere ejus) haud breve, ad extremitatem subangulatam prominens. Margo dorsalis uterque declivis et rectus; ventralis regulariter arcuatus, haud sinuatus, intus crenatus; cardinalis latus. Dentes pauci: fossa cartilaginis perparva, haud obliqua.—Minute, triangular, not elongated, rather oblique, ventricose at the umboes, elsewhere more or less compressed, rectangular above (the dorsal slopes being straight and decided), glossy, everywhere concentrically costellated; the interstitial sulci, except perhaps on the undefined and inconspicuous dorsal areas, adorned with fine and numerous radiating lyræ. Hinder side not so short as usual, subangular and prominent at its extremity. Ventral margin regularly arcuated, not sinuated, coarsely crenated within. Beaks peculiarly high, and laterally compressed. Hinge-margin broad: teeth few (ten and six); pit minute, perpendicular.—Possibly immature, but strongly characterized. The specimens were dead and devoid of epidermis.

Sect. B. *Margins not crenulated.*

22. N. PUELCHA, *D'Orb.*, f. 149.—T. ovato-trigona, subventricosa, infernè tantum rudè corrugata. Extremitas antica infernè rotundato-subangulata; postica infernè acutè obtusangularis; margo posticus rectiusculus satisque obliquus. Margo ventralis arcuatus, integer, posticè multum acclivis, haud sinuatus. Nates eminentes, acutæ. Lunula angulatim circumscripta, impressa, satis magna, vix protrusa. Area haud definita. Dentes multi. Cartilago haud horizontalis.—Ovate-triangular, not particularly oblique, subventricose, coarsely wrinkled concentrically near the ventral margin. Front extremity subangulately rounded below. Hinder side not so very short for the genus, sharply obtusangular below; the posterior edge not perpendicular, straightish. Ventral margin arcuated, entire, much and somewhat more straightly rising behind, without posterior retusion. Beaks elevated, acute. Lunule rather large, impressed, angularly defined, scarcely pouting. Front dorsal region undefined. Cartilage not horizontal. Teeth numerous.—D'Orbigny's types of this species, which remind us of *nitida* and *convexa*, are in sorry condition, without epidermis, and worn smooth. There seem some close lamellar wrinkles upon the lunule, but of this I am not sure.

23. N. OBLIQUA, *Lam.*, f. 150.—T. magna, valida, obliquè ovata, vix ventricosa, sublævigata, valde inæquilateralis, radiis haud picta, intus argentea, anticè rotundata, posticè infernè rotundato-angulata. Margo dorsalis anticus convexus satisque declivis; posticus declivis, subrectus vel subretusus; ventralis arcuatus,

haud sinuatus, intus subinteger (minutissimè crenulatus); cardinalis valde latus. Nates acutæ. Lunula haud sculpta, profundè circumscripta: area subinconspicua. Dentes antici permulti; postici perpauci. Fossa cartilaginis angusta, obliqua.—Large, strong, oblique, ovate, scarcely ventricose, smoothish or with coarse incremental wrinkles in front, very inequilateral, not colour-rayed, silvery-white within, simply rounded in front, rotundately angulated below behind. Front dorsal edge convex, not remarkably sloping; hinder slope decided, straightish or subretuse, sinuated by the profound concavity which defines the lunule. Ventral margin arcuated, devoid of a sinus, not distinctly crenulated within, yet most minutely so at the outer edge. Beaks acute, not much elevated. Hinge-margin very broad: front teeth very numerous; hinder ones very few: cartilage-pit narrow, moderately slanting.—I am indebted for the recognition of this species to M. Chenu, who having delineated the type for his beautiful 'Manuel,' kindly forwarded me the unpublished woodcut. The epidermis ranges from shining olivaceous-yellow to dark ashy-olive.

24. *N. CUMINGII*, *Hinds*, f. 117.—T. ovali-elliptica, haud ventricosa, lævigata, lineis incrementi subpliciformibus tantum ornata, cute nitidissimâ pallidè olivaceo-virente induta. Extremitas antica subattenuatè rotundata, supernè subemarginata; postica rotundato-acuminata, et longior quam in *Nuculis* aliis. Margo ventralis integer, fere semicircularis, posticè subsinuatus. Lunula parva, lanceolata, planulata. Area permagna, prominens, retusione sulciformi circumscripta.—Oval-elliptic, only subventricose, everywhere smooth, except for the subpliciform wrinkles of increase, with a polished pale greenish-olive epidermis. Anterior extremity somewhat tapering, rounded, subemarginate above, front dorsal slope convex and nearly horizontal. Posterior side long for the genus, rotundately peaked, the peak subcentral, the somewhat retuse dorsal slope not being abrupt as usual. Ventral margin entire, almost semicircular, with a slight retusion near its posterior extremity. Lunule small, lanceolate, flatly impressed. Lozenge large, prominent, well and concavely defined in the adult. Teeth usually six and eighteen.

25. *N. GRAYI*, *D'Orbigny*, f. 126.—T. ovalis, longitudine latitudinem multo superante, subventricosa, lævis, cute nitidissimâ olivaceo-virente (rarius olivaceo-fuscescente) induta, anticè subattenuatè, posticè subangulatim, rotundata. Latus posticum haud perbreve. Margo dorsalis anticè convexus, prope nates haud emi-

nentes vix declivis; posticè rectiusculus, satis modicè declivis; ventralis integer, arcuatus, utrinque valde acclivis. Aræ dorsales haud definitæ: postica subplanulata.—Oval, thin, much longer than broad, only subventricose, with a polished greenish-olive (or more rarely brownish-olive) epidermis, smooth, with at most obsolete wrinkles of increase, which are more manifest on the lunular region, rounded at both ends, somewhat taperingly so in front, subangulately so behind. Hinder side rather elongated for the genus. Front dorsal edge convex, at first scarcely sloping; hinder one only moderate, straightish. Ventral margin entire, arcuated, much curving up at both ends. Dorsal areas undefined, the hinder one somewhat flattened. Beaks not prominent.

26. *N. STRANGEI*, *A. Adams*, f. 125.—*T.* valde obliqua, subovata, longitudine latitudinem multo superante, cute nitidissimâ aureo-virente induta, concentricè corrugata. Extremitas postica haud perbrevis (utpote *Nuculae* est), infernè rotundato-angulata. Margo dorsalis anticè primum convexus vixque declivis; posticè haud repentinè declivis. Margo ventralis integer, arcuatus, utrinque, et posticè præsertim, multum acclivis. Lunula haud definita, propè nates parvas vixque eminentes subimpressa; labiis aliquantum protrusis. Area aliquantum prominens, obsolete circumscripta.—Very obliquely subovate, much longer than broad, very thin, rather compressed, with a polished pale golden-green epidermis, and faint but regular concentric wrinkles. Anterior extremity well rounded, front dorsal slope at first slight and convex. Posterior side not short for the genus, hinder dorsal slope short, not abrupt, but moderate, forming a rounded-off angle with the ventral margin, which is arcuated, entire, and rises greatly on both sides, but especially so behind. Lunular region undefined, somewhat impressed near the small and little projecting beaks, its lips rather pouting. Front dorsal area rather prominent, indistinctly defined by a retusion.

27. *N. SIMPLEX*, *A. Adams*, f. 137.—*T.* obliquè ovata, longitudine latitudinem multo superante, tenuis, subventricosa, cute nitidissimâ olivaceo-virente induta, intus cærulescens, vix lævis, obsolete concentricè striata. Extremitas lateris postici perbrevis, infernè obsolete obtusangulata. Margo ventralis integer, multum arcuatus, posticè obliquè acclivis. Nates acutæ, haud eminentes. Lunula parva, concentricè striata, infernè impresso-planulata, superne protrusa. Area prominens, haud autem definita.—Obliquely ovate, much longer than broad, thin, subventricose, with a polished epidermis that ranges in tint from pale to dark greenish-

olive; scarcely smooth, the faint striæ of growth being here and there almost regular. Anterior extremity well rounded, front dorsal slope at first slight, convex. Ventral margin entire, much arcuated, rising obliquely behind, forming a rather obscure obtuse angle with the abrupt slope of the very short posterior side. Beaks acute, not prominent. Lunule small, concentrically striated, flatly impressed below, pouting above. Front dorsal area not defined, but prominent. Nacre bluish.

28. *N. CONVEXA*, Sowerby, f. 112, 113.—*T. obliquè ovata*, longitudine latitudinem multo superante, valida, concentricè corrugato-subplicata. Latus posticum haud perbrevis, fere in medio angulatum. Margo dorsalis anticus propè nates prominentes rectiusculus vixque declivis, deinde curvatus satisque declivis; posticus brevis, demum retusus. Margo ventralis integer, multum arcuatus, posticè notabiliter obliquè acclivis. Lunula brevis, satis circumscripta, planulato-impressa, cordata. Area fere inconspicua. Margo cardinalis latus: dentes circiter 22-7: cartilago subhorizontalis.—Obliquely ovate, much longer than broad, strong, subpliciformly corrugated concentrically. Anterior side rounded at the extremity (sometimes a little taper); its dorsal slope at first straightish and nearly horizontal, then curved and moderately sloping. Posterior side not short for the genus, subcentrally angulated, its dorsal slope short, not very abrupt, eventually retuse. Ventral margin entire, much arched, very conspicuously slanting upwards behind. Umboes prominent. Lunular area tolerably defined, flatly impressed, short, cordiform. Front dorsal area a little indented, undefined. Hinge-margin broad; cartilage subhorizontal: teeth little raised, about twenty-two and seven (in the aged), very close, wide, and obtusangular.—The epidermis of the adult is unknown, but it is cinereous and shining in the fry, which is at that stage smooth, with its lunule projecting in the middle.*

29. *N. ANTIPODUM*, Hanley, f. 155.—*T. valde obliqua*, elliptica, posticè rectè truncata, anticè rotundato-attenuata, maximè inæquilateralis, valida, subventricosa, lævis, cute nitidâ pallidè

* In the 'Proceedings of the Boston Society of Natural History' (ii. p. 100), Dr. Gould refers to *N. tumida* of Reeve (? a slip of the pen) as resembling his—

N. TURGIDA.—"T. alba, subæquilateralis, subrhomboidea, posticè acuta, anticè rotundata, ventricosa, margine ventrali pendente, ubique lamellis concentricis obtusis reflexis confertis ornata: natibus prominentibus; cardine dentibus 21 utroque latere instructo. $\frac{1}{2}$ - $\frac{1}{4}$." No locality is mentioned, but the description is included in his account of Tavoy land and fresh-water shells. From the dentition and lamellation I should have thought it a *Leda* rather than a *Nucula*.

olivaceo-lutescente vel cinerascende induta, intus argentea. Margo dorsalis anticè convexus, declivis; ventralis arcuatus, integer, posticè haud sinuatus, et ibi conspicuè acclivis, cum margine postico rectiusculo angulum valde obtusum formans. Nates parvæ, acutæ, haud prominentes. Lunula magna, concentricè subrugosa, planulata, angulo definita. Area inconspicua.—*Var.* Extremitas antica tantum rotundata; postica aliquantum prominens magisque angulata.—Very oblique, truncated-elliptic, strong, subventricose, smooth, with a pale-yellowish or ashy-olive shining epidermis. Anterior side tapering from above to a rounded extremity; its convex dorsal edge at first but little, subsequently decidedly sloping. Posterior margin almost perpendicular, forming a very obtuse angle with the arcuated and entire ventral edge, which rises without sinuation, more peculiarly behind. Beaks small, acute, not projecting. Lunule large, more or less wrinkled concentrically, angular at its circumference from its flatness. No marked escutcheon. Hinge-margin, teeth, and cartilage not remarkable. Nacre silvery-white.—*Var.* Anterior end well rounded, not tapering from above only: posterior end more angulately prominent.—This may possibly be the *obliqua* of the ‘Voyage de la Venus.’

30. *N. LAYARDI*, *A. Adams*, f. 153.—*T. N. convexa* valde assimilis, tenuis, autem, minus ventricosa, tantum obsoletè, remotiusque, corrugata; lunulâ majore subangulatim circumcincta. Cutis nitidissima, cinereo-virens. Margo ventralis haud posticè sinuatus. Nates haud prominentes. Cartilago haud horizontalis. Superficies interna albo-margaritacea. Dentes circiter 15-6.—Closely resembling *convexa*, but decidedly thin, less ventricose, only faintly (rather remotely) wrinkled concentrically; the lunule rather larger, subangulately defined. Epidermis polished, greenish ash-coloured: ventral margin not indented near the hinder end. Umboes not prominent. Cartilage not horizontal: nacre white; teeth about fifteen and six, sharp, vaulted, moderately high.

31. *N. ÆGEENSIS*, *Forbes*, f. 154.—“*T. ovatâ*, subdepressâ, lævi, inæquilaterali, anticè rotundatâ, posticè angulatâ, marginibus internis lævibus.”—A single valve (the only specimen now attainable) was given to the author by Professor Forbes, and from it can only be gleaned as an addition to his most inadequate description, that the shell is subventricose at the umboes, the epidermis of a polished oil-yellow, the dorsal areas wholly unsculptured, the lunule concavely defined, the beaks very prominent, and the ventral margin much arcuated. For other details of shape

(certainly not strictly ovate, and by no means inequilateral for its genus,) the reader is referred to our engraving of that example, which closely resembles *tenuis* and *inflata*, but appears distinct.

32. N. M'ANDRÆI, *Hanley*, f. 143.—T. angustè subovata, in medio latior, pertenuis, semipellucida, valde compressa (nisi ad umbones), cute nitidissimâ cinereâ induta, undique lævis. Extremitas antica supernè rotundato-obtusangularis; postica minimè brevis (pro genere ejus), fere in medio rotundato-acutangularis. Margo dorsalis anticè rectiusculus haudque declivis; ventralis integer, multum arcuatus, posticè multum acclivis. Nates peracutæ, haud tamen valde eminentes. Areæ dorsales subimpressæ, haud circumscriptæ; lunulæ labiis carinato-protrusis.—Produced subovate, very thin, much compressed, except on the umboes, with a polished cinereous epidermis, everywhere smooth. Anterior side rotundately obtusangular above, the dorsal edge being horizontal and straightish, well rounded below; posterior side long for the genus, rotundately acutangular, the peak subcentral, the dorsal slope straightish, not abrupt: chief breadth subcentral. Ventral margin entire, much arcuated, much rising behind. Beaks not much projecting, yet conspicuous from their acuteness. Dorsal areas undefined, yet somewhat concavely impressed. Lunular lips carinately pouting.—The hinge resembles that of *tenuis*, but the teeth seem scarcely so numerous. I doubt, however, the maturity of the examples.

33. N. TENUIS,* *Mont.*, f. 140, 141.—T. pertenuis, undique (etiam ad umbones) compressa, anticè semiovalis, posticè brevissima et rotundato-biangulata; cute nitidissimâ olivaceo-lutescente vel olivaceo-cinereâ induta, lineis incrementi tantum insculpta. Margo dorsalis anticus prope nates acutas, perparvas, valde obliquo, vix prominentes, rectiusculus vixque declivis, deinde arcuatus et declivis; ventralis integer, ante medium valde arcuatus. Areæ dorsales minimè definitæ; lunulæ labiis protrusis. Dentes circiter 15–7.—Very thin, compressed (even at the umboes), about half as long again as broad, chiefly expanded anteriorly at about one-third the entire length, semioval in front, rotundately biangulated behind, with a polished epidermis, that ranges in tint from

* The *N. tenuis* of Gould (*Invert. Massach.* p. 105, f. 64.—*Dekay*, *N. York Moll.* 181), described from scarcely matured examples, is exactly intermediate in characters between the typical *tenuis* and the boreal *inflata*. It is more produced lengthways, less swollen, and usually greener than the latter; more trapezoidal, less arcuated ventrally, and less rising and projecting at the lower posterior corner than the former. Gould states that the manuscript name *lucida* was attached to the specimens in the Philadelphia Museum, and it is doubtful whether it should be regarded as a distinct species, or as a mere varietal link with *inflata*.

olivaceous-yellow to ashy-olive, smooth, yet with strongly marked wrinkles of increase. Ventral margin entire, arcuated (the arch very prominent just before the middle), rising somewhat more straightly behind, so as to form a rounded-off obtuse angle with the straightish or somewhat convex, rather abrupt posterior edge. Front dorsal edge just at first straightish, and subhorizontal, then much curved and descending. Posterior side very short, projecting below. Dorsal areas wholly undefined; lunular lips pouting. Beaks very small, bent much forward, scarcely prominent, yet conspicuous from their acuteness. Front hinge-margin sunken internally. Teeth (in the adult) about fifteen and seven or sixteen and eight; the front ones scarcely vaulted, and near the extremity compressed and seated on the inner edge. When not quite mature a rounded off, very obtuse, angle is exhibited at the front dorsal corner.

34. *N. INFLATA*, *Hancock*, f. 115, 116.—*T. sp. præcedenti similima, sed magis trapezæformis, (sæpius brevior) ventricosavel tumida, umbonibus inflatis, prominentibus, cute sordidè luteo-virente, vel olivaceo-brunnèa. Margo ventralis neque ante medium notabiliter arcuatus, nec posticè conspicuè acclivis. Extremitas postica abruptè truncata, haud infernè eminens. Lunula infernè planulata.*—Closely resembling *tenuis*, but more trapeziform, ventricose or tumid, swollen and projecting at the umboes, usually only one-fourth longer than broad; the epidermis ranging from dirty yellowish-green to olive-brown. Ventral margin neither particularly swollen before the middle, nor peculiarly rising behind. Posterior side abruptly truncated, not projecting below. Lunular region not strictly defined, but flattened at the circumference. Teeth and hinge-margin not peculiar.

35. *N. BELLOTHI*, *A. Adams*, f. 128.—*T. tenuis, subventricosa, cute nitidissimâ, in medio olivaceo-virente, luteâ autem supernè, posticè, et aliquando etiam infernè, induta; nisi ad umbones concentricè plicato-corrugata. Dimidium anticum obliquè semiellipticum; posticum supernè subrectangulare, infernè rotundato-subangulatum. Latus posticum fere excisum. Margo ventralis integer, in medio subarcuatus, utrinque acclivis. Lunula dense corrugato-plicata, vix definita, infernè concaviuscula. Area expansa, aliquantum subimpressa.*—Anterior half obliquely semielliptic, posterior half subrectangular above, rotundately broadly subangulated below; thin, subventricose, with a very highly polished epidermis, which is yellow dorsally, posteriorly, and, for the most part, ventrally, before the middle, and is greenish-olive

elsewhere, smooth on the umboes, but elsewhere with puckered wrinkles of increase, which are very conspicuous below. Front dorsal edge horizontal or rising, at first almost straight. Posterior side almost excised, the hinder edge being almost perpendicular, and the beaks, which, when not eroded, are acute and prominent, being almost terminal. Ventral margin entire, subarcuated in the middle, rising convexly at both ends. Lunular region much and closely puckered, not strictly defined, yet concavely impressed at its circumference, and often marked with a few irregular radiating incised lines. Front dorsal region expanded, disposed to be indented.—The hinge appears to resemble that of *tenuis*, but I have not examined any example which was uninjured in that respect.

36. N. DELPHINODONTA,* *Mighels*, f. 138, 139.—*T. minima*, subobliqua, latè ovato-trigona, ventricosa, cute nitidissimâ olivaceo-virente vel olivaceo-luteâ induta, infernè plicis planulatis subinclinatiss, sulcisque latis (aliquando etiam supernè) concentricè sculpta. Extremitas antica infernè rotundato-subangulata : latus posticum fere nullum, infernè obliquè retundato-excisum. Margo ventralis integer, modicè arcuatus. Nates valde prominentes, sæpius erosæ. Lunula vix definita, rudè et concentricè corrugata, valde prominens. Area inconspicua.—Minute, of a rather oblique abbreviated ovate-triangular shape, ventricose, especially behind, clothed with a polished olivaceous-green or olivaceous-yellow epidermis, concentrically divided near the lower margin by broad shallow sulci into flattened and somewhat shelving folds: the sulci here and there perceptible (but not regular) on the umbonal region likewise. Anterior extremity subangulately rounded below: posterior edge almost perpendicular. Ventral margin entire, moderately arcuated, rising behind so as to obliquely round off the posterior corner. Beaks much elevated, usually eroded. Lunular region very prominent, undefined (at most a little impressed at its margin), coarsely wrinkled concentrically. Front dorsal area undefined. Hinge-margin broad: cartilage not at all horizontal: teeth three or four, and seven to ten.

* N. NANA, *Hinds*, *Proc. Zool. Soc.* 1843, p. 98.—“*T. minima*, trigono-elliptica, lævigata, nitida; marginibus ventralibus minutissimè crenulatis; cardine anticè dentibus 5, posticè 11; umbonibus fuscis. Long. 1 lin.” This minute shell, said to come from the Philippines, and described from Mr. Cuming’s collection, must, I suspect, have been lost; for the three specimens named in that cabinet (f. 156) belong to this species, and do not agree with their description. As Mr. Hinds omitted to figure it, and the definition is wholly inadequate, the species may be regarded as too uncertain to be retained.

SOLENELLA, *Sowerby*.

Gen. Char. Longer than broad, not nacreous, gaping at both ends, with a prominent external ligament, and a distinct pallial sinus. Hinge with numerous sharp high teeth on one or both sides.

Sect. I. SOLENELLA proper. Species 1 and 2.—Oval, thin, unsculptured, with a polished epidermis; dorsal margin excised for the ligament: pallial sinus very large. Anterior side with very few teeth, but a blade-like continuation of the inner margin.

Sect. II. NEILO, *Adams*. Species 3.—Sculptured, the epidermis unpolished. Anterior gape slight. Teeth in a straight line, nearly equally numerous on both sides.

1. *S. NORREISII*, *Sowerby*, f. 1, 2.—*T. subovata*, *subæquilateralis*, *subcompressa*, *cute nitidissimâ olivaceâ induta*, *sublævigata*, *posticè (etiamque anticè, sed obsoletius) radio lato vix impressa*. *Extremitas lateris antici brevioris angustiorisque, in medio retusa, supernè rotundato-subangulata, infernè obliquè rotundata*. *Margo dorsalis uterque vix declivis, anticè convexiusculus; ventralis convexus, anticè magis acclivis*. *Areae dorsales nullæ. Dentes antici permulti*.—*Var.* *Latior, brevior, rugis incrementi conspicuis; extremitas antica tantum attenuato-rotundata: margo dorsalis utrinque magis declivis*.—*Subovate*, somewhat compressed, gaping very much at both ends, with a polished olivaceous epidermis that ranges in tint from yellowish to cinereous, merely marked by concentric wrinkles of increase, which in aged examples become almost fold-like near the lower margin; devoid of umbonal ridge or defined dorsal areas; marked, in the adult, with an almost obsolete shallow broad indented ray behind, and a still fainter one in front, at whose terminations the ventral margin is indented. Extremity of the anterior side, which is rather, yet decidedly, the shorter and narrower, retuse in the middle, subangularly rounded above, obliquely rounded-off below: posterior end unsymmetrically rounded. Dorsal slopes slight; front one plano-convex, rather the more decided: hinder one excavated for the ligament. Ventral margin convex, more rising in front. Teeth extremely fine, very numerous in front, scarcely any behind.—*Var. brevior*. Shorter, broader, and with the slopes consequently rather more decided; wrinkles of growth numerous and conspicuous: anterior extremity merely attenuatedly rounded.

2. *S. CUMINGII*, *Hanley*, f. 3.—*T. sp. præcedenti simillima, sed anticè multum longior, et tantum rotundato-attenuata; radii*

impressi obsoleti. Extremitas postica latiuscula, obsoletè biangulata, vel rotundato-subrhomboidalis. Margo dorsalis anticus convexus satisque declivis: posticus brevis vixque declivis. Dentes postici permulti.—Suboval, rather compressed, much gaping at both ends, white under a polished yellowish olive-coloured epidermis, devoid of umbonal ridge or defined dorsal areas, merely marked with concentric wrinkles of increase, with the indented rays and their terminal retusions almost imperceptible. Anterior side very decidedly the longer, tapering to a symmetrically rounded extremity: posterior extremity broadish, either rotundately subbiangulated or faintly rhomboidally rounded, the hinder end being the more projecting. Front dorsal slope convex, moderately decided; hinder one very slight and short, excavated for the ligament. Ventral margin convex, curving up moderately in front. Teeth rather fine, numerous behind, scarcely any in front.—The most striking peculiarity is, that the anterior side, which is the shorter in *Norrisii*, is in this species the longer.

3. *S. AUSTRALIS*, *Quoy and Gaim.*, f. 32.—*T. subrhombea*, subinæquilateralis, ad umbones ventricosa, infernè compressiuscula, cute fugaci vix nitidâ cinereo-lutescente induta, undique concentricè lirata: regio postica supera (ultra plicam umbonalem conspicuam) tertiam superficiei implens, in medio retusa. Extremitas lateris antici brevioris supernè angulata, infernè obliquè rotundata; postica supernè angulata, in medio incurvata, infernè rotundata. Margo dorsalis anticè rectiusculus vixque declivis; posticè concaviusculus et acclivis; ventralis in medio subretusus.—Subrhombic, more or less ventricose at the umbonal region, plano-convex below it, obliquely divided into two areas by an umbonal ridge, which parts off a posterior triangle that occupies a full third of the entire surface, and is retuse in the middle, gaping considerably at the hinder extremity: dull-white under a rather dull yellowish ash-coloured fugacious epidermis, everywhere (the dorsal areas excepted) roughened by rather distant concentric raised striæ, otherwise unsculptured. Anterior side scarcely three-sevenths of the entire length, angulated above by the almost horizontal straightish dorsal edge, obliquely rounded below. Posterior dorsal edge concavely elevated, and so produced that the angulated upper termination projects far beyond the rounded hinder ventral extremity: posterior edge incurved in the middle. Ventral margin subparallel to the dorsal, convex or subarcuated, except in the centre, where it is somewhat retuse. Lips of the escutcheon, which is sublinear and plano-concave, pouting. Lunule very narrow, if any.

INDEX TO THE NUCULIDÆ.

The synonyms are in italics.

- abyssicola, *Tor.*, L. sp. 72, f. 167.
 Ægeensis, *Forbes*, N. 31, f. 154.
 amygdalea, *Val.*, L. 53, f. 8, 10, 11.
 analis, *Phil.*, p. 27.
 angularis, Möller = *Thraciæformis*.
 antipodum, *Haut.*, N. 29, f. 155.
 arctica, *Gray*, L. 60, f. 5.
 arctica, *Brod.* = lanceolata.
 argentea (Arca), *Poli* = ? decussata.
 argentea, *Brown.* — See nitida.
 argentea, *Da Costa.* — See nucleus.
 Australis, *Quoy & Gaim.*, S. 3, f. 32.
 Belcheri, *Hinds*, L. 21, f. 53.
 Bellotii, *Adams*, N. 35, f. 128.
 bellula, *Adams*, L. 30, f. 74.
 bicuspidata, *Gould*, L. 23, f. 73.
 Brookei, *Haut.*, L. 47, f. 106.
 buccata, *Steen.*, L. 15, f. 63, 64, 174.
 Cascoensis, *Migh.* — See arctica.
 castanea, *Adams*, N. 5, f. 130.
 castrensis, *Hinds*, N. 18, f. 148.
 caudata, *Donov.*, L. 17, f. 60.
 Chilensis (*Malletia*) = *Norrisii*.
 Chuva, *Gray*, L. 25, f. 67.
 cœlata, *Hinds*, L. 42, f. 95, 96, 172.
 commutata, *Phil.*, L. 45, f. 80, 81.
 complanata, Möller = minuta.
 concinna, *Adams*, L. 12, f. 54, 55.
 confusa, *Haut.*, L. 26, f. 85.
 Conradi, *Haut.*, L. 44, f. 101.
 convexa, *Sow.*, N. 28, f. 112, 113.
 corticata, *Holb.*, f. 157, 158.*
 costellata, *Sow.*, L. 11, f. 59.
 crassa, *Hinds*, L. 27, f. 69.
 crenifera, *Sow.*, L. 8, f. 37, 38.
 crenifera, *Haut.* = Metcalfei.
 crenulata, *Ad.*, N. 16, f. 134, 135.
 crispa, *Hinds*, L. 50, f. 107, 108.
 Cumingii (N.), *Hinds*, N. 24, f. 117.
 Cumingii, *Haut.*, S. 2, f. 3.
 Cumingii (*Neilo*), *Adams* = S. Australis.
 cuneata, *Sow.*, L. 40, f. 92, 93.
 cuneata, *Haut.* = Elenensis.
 curcistrostrum, *Humph.* = rostrata.
 declivis, *Hinds*, N. 15, f. 147.
 decora, *Adams*, L. 10, f. 47, 48.
 decussata, *Sow.*, N. 1, f. 109, 110, 111.
 delphinodonta, *Mighels*, N. 36, f. 138, 139.
 divaricata, *Hinds*, N. 20, f. 151.
 divaricata, *Valenc.* = ? obliqua.
 eborea, *Conrad*, L., † f. 176 (undetermined).
 eburnea, *Sow.*, L. 33, f. 90.
 Eightsi, *Couth.*, L. 64, f. 164.
 electa, *Adams*, L. 6, f. 40, 41.
 Elenensis, *Sow.*, L. 29, f. 70, 71, 72.
 elongata, *Sow.*, L. 1, f. 39.
 elongata, *Daudin* = pernula.
 elongata, *Val.* = Sowerbiana.
 emarginata, "Lam." *Phil.* = pella, *Linn.*
 Eolica, *Val.* = lanceolata.
 excavata, *Hinds*, L. 52, f. 104, 105.
 exigua, *Sow.*, N. 17, f. 136.
 expansa, *Reeve* = Bellotii.
 fabula, *Sow.* = pella, *Linn.*

* Supposed by Mörch, etc., to be = *delphinodonta*; is larger, less triangular, and more swollen than the ordinary form; in place of coarse distant ridges of growth, it seems to be more closely, finely, and regularly sulcated below.

† "Ovate-acute, ventricose, with minute concentric very regular lines, highly polished, ivory-white; anterior side beaked, pointed, rather the longer."

- fastidiosa*, Adams, L. 35, f. 82, 83.
fluvialis, Schröter = *pernula*.
fragilis, Chemn., L. 31, f. 171.
fulgida, Adams, L. 34, f. 91.
frigida, Tor., L. 67, f. 168, 169.
gibba, Adams = *mitralis*.
gibbosa, Sow., L. 28, f. 79.
glacialis, Leach (teste Gray), L. 68, f. 30, 31.
gloriosa, Adams, L. 5, f. 42, 43.
Gouldii, Dekay, p. 36, f. 162.
Grayi, D'Orb., N. 25, f. 126.
Hindsii, Hanl., L. 51, f. 102.
hyperborea, Loven = *arctica*.
inconspicua, Adams, L. 19, f. 77, 78.
inflata, Hanc., N. 34, f. 115, 116.
inornata, Adams = *cuneata*.
intermedia, Oersted = *pernula*, teste Torell.
interrupta (Arca), Poli = *PELLA*.
Jamaicensis, D'Orb., L. 49, f. 173.
Japonica, Ad. & Reeve, L. 65, f. 14.
lanceolata, J. Sow., L. 57, f. 12.
lanceolata, Lam. = *Taylori*.
lanceolata, Sow. Senior = *electa*.
lanceolata, Sow. Junior = *Sowerbiana*.
Largillierti, Phil. = *bicuspidata*.
lata, Hinds, L. 20, f. 44, 45.
laternaria, Val. = *Thraciaformis*.
Layardi, Adams, N. 30, f. 153.
LEDA, p. 2.
lenticula, Möller = *pygmæa*.
lepida, Adams = *serotina*.
lepidula, Adams, L. 55, f. 6.
limatula, Say, L. 59, f. 9.
limosa, Phil., p. 38.
lævigata, Gould = *sapotilla*.
lævigata, Spengl. = *Nicobarica*.
lævigatus (*Lembulus*), Beck. = *arctica*?
lucida, Lov., L. 69, f. 23, 24, 25.
lugubris, Ad., L. 18, f. 75, 76.
lyrata, Hinds = *eburnea*.
M'Andræi, Hanl., N. 32, f. 143.
macilenta, Steenst. = *pernula*.
Malabarica, Hanl., N. 21, f. 152.
margaritacea, Brug.—See *nucleus*.
margaritacea, Sow. = *radiata*.
margaritacea, Adams = *convexa*.
marmorea, Hinds, N. 11, f. 145.
Martini, Bolten = *pernula*.
Mauritiana, Sow., L. 38, f. 99.
Metcalfei, Hanl., L. 9, f. 34.
micans, Adams, L. 43, f. 100.
minuta, Phil. (as of *Brocchi*) = *commutata*.
minuta, Gould = *tenuisulcata*.
minuta, Muller, L. 16, f. 61, 62.
minuta, Mont. = *caudata*.
mirabilis, Ad. & Reeve, N. 19, f. 114.
mitralis, Hinds, N. 10, f. 144.
Montagui, Gray = *rostrata*.
Mulleri, Gray = *Thraciaformis*.
myalis, Couth., L. 61, f. 18.
myalis, Hanl. = *arctica*.
nana, Hinds, N. p. 59.
nasuta, Sow., L. 37, f. 86.
navicula, Valenc. = *Australis*.
navicularis, Couth. = *Thraciaformis*.
Nicobarica, Brug., L. 55, f. 7.
nitida, Sow., N. 7, f. 120.
nitidula, Adams, N. 6, f. 142.
Norrisii, Sow., S. 1, f. 1, 2.
nucleus, Linn., N. 2, f. 121, 122, 159.
NUCULA, p. 43.
Nuculoides, Blainv. = *Norrisii*.
obesa, Stimp., p. 37, f. 163.
obliqua, Lam., N. 23, f. 150.
obliqua, Sow. = *Grayi*.
obliquata, Beck.—See *inflata*.
oblonga, Brown = *pernula*.
ornata, D'Orb., L. 41, f. 97, 98.
parva, Sow. = *minuta*.
Patagonica, D'Orb., L. 3, f. 49, 50, 51, 52.
paulula, Adams, N. 9, f. 131, 132.
Paytensis, Ad., f. 160, 161.—See *crenulata*.

- PELLA*, Linn., L. 22, f. 65, 66.
PELLA, Gm. = fragilis.
PELLA, Sow. = confusa.
PELLA, Brug. = commutata.
PELLUCIDA, Gm. = Nicobarica.
PERNULA, Müll., L. 14, f. 56, 57, 58.
PISUM, Sow., N. 14, f. 133.
PPLICIFERA, Adams = bicuspidata.
POLII, Phil. = decussata.
POLITA, Sow., L. 36, f. 68.
PORTLANDIA, pp. 2, 40.
PORTLANDICA, Hitch. = glacialis.
PROXIMA, Say, N. 8, f. 118, 119.
PUELCHA, D'Orb., N. 22, f. 149.
PUELLATA, Hinds, L. 39, f. 94.
PULCHRA, Hinds, N. 13, f. 146.
PYGMÆA, Munst., L. 70, f. 26, 27.
RADIATA, Dekay = proxima.
RADIATA, Hanl., N. 4, f. 123, 124.
RECTA, Hinds, L.,* f. 175 (undetermined).
RECURVA, Conrad = rostrata.
RETICULATA, Hinds, L. 46, f. 103.
RETUSA, Hinds, L. 71, f. 28, 29.
ROSSIANUS, Risso = *PELLA*, Linn.
ROSTRATA, Gmel. & Schum. = *PERNULA*.
ROSTRATA, Mont., L. 24, f. 84.
ROSTRATA, Sow. = caudata.
RUGULOSA, Sow., p. 149.
SAPOTILLA, Gould, L. 63, f. 16.
SEMIORNATA, D'Orb. = *PISUM*,† var.
- semisulcata*, Adams = *lata*.
serotina, Hinds, L. 54, f. 19, 20, 21.
siliqua, Reeve = *glacialis*.
simplex, Adams, N. 27, f. 137.
Sowerbiana, D'Orb., L. 2, f. 33.
Strangei, Adams, N. 26, f. 125.
striata, King, p. 19.
striata, Phil. = *commutata*.
striata, Sow. = *fragilis*.
striolata, Adams, N. 3, f. 129.
sulcata, Phil. = *decussata*.
sulcata, Adams, N. 12, f. 127.
sulcatus, Leach = *caudata*.
sulcifera, Reeve, L. 73, f. 165, 166.
sulculatus, Risso (indeterminable).
suleolata, Couth., p. 25, f. 177.
Taylori, Hanl., L. 7, f. 35.
Tellinoides, Sow., L. 4, f. 36.
tenella, Hinds, L. 56, f. 15.
tenuis, Mont., N. 33, f. 140, 141.
tenuis, Möller = *inflata*.
tenuisulcata, Couth., L. 13, f. 87.
Thraciæformis, Storer, L. 66, f. 4, 13.
truncata, Brown = *glacialis*.
tumida, Hinds = *convexa*.
turgida, Gould, p. 159.
ventricosa, Hinds, L. 32, f. 88, 89.
vitrea, D'Orb., L. 48, f. 170.
YOLDIA, pp. 2, 34.
Woodwardi, Hanl., L. 62, f. 17, 22.

* "T. oblonga, tumida, inclinatè sulcata, rectè et attenuatè rostrata, posticè rotundata."

† As the engraving of this shell would hardly warrant this synonym, I subjoin a description of D'Orbigny's types, which now rest in our national Museum.—

N. SEMIORNATA, D'Orb. *Amér. Mérid.* 624. pl. 84. f. 27, 28, 29.—Somewhat obliquely ovate, much longer than broad, subventricose, with a shining ashy-olive epidermis, concentrically traversed, towards the ventral margin, especially in front, by somewhat wavy and rather irregular riblets, and adorned on the dorsal regions with divergent curved close costellar striæ; otherwise unsculptured, yet with traces of the radiating crenulæ near the shorter end. Anterior side much produced, its tip well rounded and slightly tapering; its dorsal edge convex. Posterior side extremely short, its lower corner cut off by the oblique rise of the arched and finely crenulated ventral margin. Posterior edge almost perpendicular, convex. Dorsal areas undefined. $\frac{1}{5}$. San Blas, N. Patagonia.

NUCULIDÆ.

PLATE I.

The specimens figured are chiefly from Mr. Cuming's collection. The following abbreviations have been used to economize space:—*Am. Mér.* = the conchological portion of the 'Voyage dans l'Amérique Méridionale'; *Biv.* = Recent Bivalves; *C. I.* = Conchological Illustrations; *C. S.* = Conchologia Systematica, vol. i.; *Gen.* = Genera of Shells, plate Nucula; *Mass.* = Invertebrata of Massachusetts; *Sul.* = Mollusca of the Voyage of the Sulphur; *Syn.* = Synopsis Testaceorum; *Z. J.* = Zoological Journal; *Z. P.* = Proceedings of the Zoological Society of London.

- | Fig. | Sp. |
|------------|---|
| 1, 2. | 1. SOLENELLA NORRISII, Sow. <i>Z. P.</i> 1832. p. 197; <i>Gen. n.</i> 39; Reeve, <i>C. S.</i> i. pl. 30; <i>D'Orb. Am. Mér.</i> — <i>Malletia Chilensis</i> , Desm. <i>Act. Linn. Bordeaux</i> , v.— <i>Ctenoconcha Nuculoides</i> , Blainv. <i>Zool. Voy. Venus</i> , Moll. pl. 23. f. 8. Valparaiso. |
| 3. | 2. S. CUMINGII, Hanl. <i>Z. P.</i> 1860. Falkland Isles. |
| 5. | 60. LEDA (Y.) ARCTICA.— <i>Nucula</i> a., Gray, <i>Apx. Parry Voy.</i> 241 (probably).— <i>N.</i> Cascoensis, Mighels, <i>Bost. J. Nat. Hist.</i> iv.— <i>Yoldia</i> a., Möller, <i>Moll. Groenl.</i> p. 18.— <i>N. Myalis</i> , Hanl. <i>Biv.</i> pl. 19. f. 45.— <i>Y. hyperborea</i> , Torell, <i>Spitzberg. Moll.</i> 149. pl. 2. f. 6 (as <i>N. h. of Loven's MSS.</i> , mentioned by Gould). <i>Spitzbergen</i> . |
| 6. | 55. L. LEPIDULA.— <i>Yoldia</i> l., A. Adams, <i>Z. P.</i> 1856. p. 50. Borneo. |
| 7. | 53. L. NICOBARICA.— <i>Arca lævigata</i> , pellucida, Nicobarica, Chemn. vii. 194. f. 541, from which A. l., Spengl. <i>Cat. pl.</i> 1. f. 10, 11 (teste Brug.), and Dillw. <i>Des. Shells</i> , 237; A. p., Gmel. 3308; A. N., Brug. <i>Vers.</i> 108.— <i>Nucula</i> N., Lam.; Sow. <i>C. I.</i> f. 4; Reeve, <i>C. S.</i> pl. 85. f. 4. E. Indies. |
| 9. | 59. L. (Y.) LIMATULA.— <i>Nucula</i> l., Say, <i>Amer. Conch. pl.</i> 12; <i>Conr. Amer. Mar. Conch. p.</i> 30. pl. 6. f. 1; Gould, <i>Mas.</i> 98, f. 62; Hanl. <i>Biv.</i> 170. pl. 20. f. 4; Dekay, <i>N. York Moll.</i> 180. f. 218. Maine and Massachusetts. |
| 8, 10, 11. | 58. L. (Y.) AMYGDALÆA.— <i>Nucula</i> a., Valenc. <i>Zool. Venus, Mol. pl.</i> 23. f. 6. Kamtschatka. |
| 12. | 57. L. (Y.) LANCEOLATA.— <i>Nucula</i> l., J. Sow. <i>Mineral Conch. pl.</i> 180. f. 1 (fossil).— <i>N. arctica</i> , Brod. and Sow. <i>Z. J.</i> iv. 359. pl. 9. f. 1; Hanl. <i>Biv.</i> 168. pl. 20. f. 7; Middend. <i>Malac. Ross.</i> iii. 28.— <i>N. Æolica</i> , Valenc. <i>Voy. Venus, Mol. pl.</i> 23. f. 3. Kamtschatka. |
| 4, 13. | 66. L. (Y.) THRACLEFORMIS.— <i>Nucula</i> T., Storer, <i>Boston J.</i> ii. 122; Gould, <i>Mass.</i> 97. f. 66; Hanl. <i>Biv.</i> 169. pl. 20. f. 15; Dekay, <i>N. York Moll. p.</i> 178. f. 217.— <i>Yoldia angularis</i> , Möller, <i>Moll. Groenl.</i> p. 17.— <i>Nucula laternaria</i> , Valenc. <i>Voy. Venus, Moll. pl.</i> 23. f. 5.— <i>Y. Mulleri</i> , Gray, <i>Voy. Fly, Apx.</i> ii. 361. pl. 2. |

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- Fig. Sp.
- f. 4.—YOUNG. *N. navicularis*, *Couth. Bost. J. Nat. H.* ii. 178. *pl.* 4. *f.* 4; *Hanl. Biv.* 170; *Dekay, N. York Moll.* 180. N. America.
14. 65. L. (Y.) JAPONICA.—*Nucula* J., *Adams & Reeve, Zool. Samarang, Moll.* 75. *pl.* 21. *f.* 9. Japan.
15. 56. L. TENELLA.—*Nucula* t., *Hinds, Z. P.* 1843. *p.* 99; *Hanl. Biv.* 376. *pl.* 19. *f.* 47. Singapore.
16. 63. L. (Y.) SAPOTILLA.—*Nucula* s., *Gould, Mass.* 100. *f.* 61; *Dekay, N. York Moll.* *p.* 180. *f.* 220; *Hanl. Biv.* 170. *pl.* 20. *f.* 3. Massachusetts.
- 17, 22. 62. L. (Y.) WOODWARDI.—*Yoldia* W., *Hanl. Z. P.* 1860. Falkland Isles.
18. 61. L. (Y.) MYALIS.—*Nucula* M., *Couth. Bost. J. Nat. H.* ii. 62. *pl.* 3. *f.* 7; *Dekay, N. York Moll.* *p.* 180. *f.* 219. N. England.
- 19-21. 34. L. SEROTINA.—*Nucula* s., *Hinds, Z. P.* 1843. *p.* 99. —*N. lepida*, *A. Adams, Z. P.* 1856. *p.* 49. Singapore. Philippines.

PLATE II.

- 23-25. 69. L. (P.) LUCIDA.—*Yoldia* l., *Loven, Index Moll. Skandinav.* *p.* 34. N. Europe.
- 26, 27. 70. L. (P.) PYGMÆA.—*Nucula* p., *Munster in Philippi, Mol. Sic.* ii. *p.* 46 (fossil); *Hanl. Biv.* *p.* 377. *pl.* 20. *f.* 18; *Middend. Mal. Ross.* iii. *p.* 28.—*N. lenticula*, *Möller, Moll. Groenl.* *p.* 17.—*N. tenuis*, *Jeffr. Ann. Nat. H.* xix. *p.* 313.—*Yoldia* p., *Loven, Ind. Moll. Skand.* *p.* 35; *Middend. Sibir.* *pl.* 18. *f.* 15-18. —*N. p.*, *Forb. and Hanl. Brit. Moll.* ii. *p.* 230. *pl.* 47. *f.* 10. Britain. N. Europe.
- 28, 29. 71. L. (P.) RETUSA.—*Nucula* r., *Hinds, Z. P.* 1843. *p.* 99; *Sul.* *p.* 63. *pl.* 18. *f.* 9. Straits of Malacca. Philippines.
- 30, 31. 68. L. (P.) GLACIALIS.—*Nucula* g., *Gray (as Lembulus g. of Leach) Ann. Philos.* 1825 (name only); *Index Test. Suppl.* *pl.* 2. *f.* 6.—*N. truncata*, *Brown, Conch. G. B.* *p.* 84. *pl.* 33. *f.* 18.—*N. Portlandica*, *Hitchcock, Bost. J. Nat. H.* i. *p.* 327, 328 (figure) as fossil; *Reeve in Belcher's Last Arct. Voy.* *p.* 396. *pl.* 33. *f.* 3.—*N. siliqua*, *Reeve, Z. P.* 1856. *p.* 48; *in Belcher's Last Arct. Voy.* *pl.* 33. *f.* 4.—*Nuculana g.*, *Mörch, Prodr. Moll. Grönl.* Arctic Ocean.
32. 3. S. (N.) AUSTRALIS.—*Nucula* A., *Quoy and Gaim. As-trol.* viii. *p.* 471. *pl.* 78. *f.* 5-10.—*Neilo Cumingii*, *A. Adams, Z. P.* 1852. *p.* 93.—*Ctenoconcha navicula*, 1846, *Valenc. Voy. Venus, Moll.* *pl.* 23. *f.* 7. N. Zealand.
33. 2. L. SOWERBIANA, *D'Orb.*—*Nucula lanceolata* (not *J. Sow. or Lam.*), *G. Sow. C. I.* *f.* 1; *Reeve, C. S. i.* *pl.* 84. *f.* 1; *Hanl. Biv.* *pl.* 19. *f.* 49.—*N. elongata*,

- Fig. Sp. *Valenc. Voy. Venus, Moll. pl. 23. f. 4 (probably).*
Xipixapi.
34. 9. L. METCALFEI, *Hanl. Z. P. 1860.*—*Nucula crenifera*,
Hanl. (not Sow.) Biv. pl. 19. f. 51 (not desc.).
Philippines (*Cuming*).
35. 7. L. TAYLORI, *Hanl. Z. P. 1860.*—*Nucula lanceolata*,
Lam. (not J. Sow.); Hanl. Biv. p. 167 (not fig.).
Guatemala.
36. 4. L. TELLINOIDES.—*Nucula* T., *Sow. Gen. f. 2; Hanl. Biv. 167.*—*Arca* T., *Wood, Ind. Test. Sup. pl. 2, Arc. f. 5.* Cumana.
- 37, 38. 8. L. CRENIFERA.—*Nucula* c., *Sow. Z. P. 1832. p. 197; C. I. f. 3; Müller, Syn. 190; Desh. ed. Lam. vi. 507; Reeve, C. S. pl. 84. f. 3; Hanl. Biv. 167 (not fig.).*—L. c., *D'Orb. Am. MÉR. 545.* Xipixapi.
39. 1. L. ELONGATA.—*Nucula* c., *Sow. Z. P. 1832. p. 197; C. I. f. 2; Müller, Syn. 190; Reeve, C. S. pl. 84. f. 2; Hanl. Biv. 167. pl. 19. f. 50 (badly); D'Orb. Am. MÉR. 543.* Salango, W. Columbia.
- 40, 41. 6. L. ELECTA, *A. Adams, Z. P. 1856. p. 48.*—*Nucula lanceolata*, *G. Sow. (not J. Sow. or Lam.), Gen. f. 1.* Santos, Brazil.
- 42, 43. 5. L. GLORIOSA.—*Yoldia* g., *A. Adams, Z. P. 1855. p. 226.* Singapore.
- 44, 45. 20. L. LATA.—*Nucula* l., *Hinds, Z. P. 1843. p. 99; Sul. 64. pl. 18. f. 10.*—L. semisulcata, *A. Adams, Z. P. 1856. p. 50.* New Guinea. Borneo.
- 47, 48. 10. L. DECORA, *A. Adams, Z. P. 1856. p. 50.* W. Indies.
- 49-52. 3. L. PATAGONICA, *D'Orb. Am. MÉR. 544. pl. 82. f. 1-3.*—*Nucula* P., *Hanl. Biv. 167. pl. 20. f. 14.* Patagonia.
53. 21. L. BELCHERI.—*Nucula* B., *Hinds, Z. P. 1843. p. 98; Sul. 63. pl. 18. f. 11.* L'Agulhas Bank, Cape G. Hope, in deep water.
- 54, 55. 12. L. CONCINNA, *A. Adams, Z. P. 1856. p. 48.* N. Zeal.

PLATE III.

- 56-58. 14. L. PEENULA.—*Arca* p., *Müll. Beschäft. Naturf. Berlin, iv. 55, 57.*—*A. fluviatilis*, *Schröt. Flüss. 187. pl. 9. f. 2.*—*A. Martini*, rostrata, *Chemn. Conch. vii. 206. f. 551, termed A. M. by Schröter in his Index, and by Bolten.*—*A. r.*, *Gmel. 3308; Brug. Vers. 110; Lam.; Wood, Ind. Test. pl. 10. f. 43.*—*N. elongata*, *Daudin in Bosc. iii. 138. pl. 22. f. 5, 6.*—*N. f.*, *Sow. Gen. f. 3; Hanl. Biv. 168.*—*L. r.*, *Schum. Sys. Tes. 173. pl. 19. f. 4.*—*L. macilenta*, *Steenstr. in Möller, Groenl. Moll. 17 (teste Mörch).*—*Nuculana* p., *Mörch, Prodr. Grönl. Borcal Seas.*
59. 11. L. COSTELLATA.—*Nucula* c., *Sow. Z. P. 1832; C. I. f. 8; Müller, Syn. 191; Desh. ed. Lam. vi. 508;*

- Fig. Sp. *Reeve, C. S. pl. 85. f. 8; Hanl. Biv. 169. pl. 19. f. 54. Panama.*
60. 17. L. CAUDATA.—*Arca minuta*, *Mont. (not Fabric.) Test. Brit. p. 140.*—A. c., *Donov. Br. Shells, pl. 78.*—*Nucula m., Turt. Dilk. Br. 178; Hanl. Biv. 168.*—N. rostrata, *Sow. Gen. f. 5; Macgil. Aberd. p. 245.*—L. c., *Loven, Ind. Moll. Skand. 34; Forb. and Hanl. Brit. Moll. ii. 226. pl. 47. f. 11–13.*—*Lembulus sulcatus, Leach, Moll. Brit. pl. 12. f. 3, 4.*—L. intermedia, *Oersted de Region. Marin. 80 (teste Torell.). Britain. N. Europe.*
- 61, 62. 16. L. MINUTA.—*Arca m., Fabric. Fauna Groenl. 414. as of Müll. Prodr. Z. Danic. 2985. (indefinite); Gmel. 3309.*—A. m. *Groenlandica, Chemn. Conch. x. 351, f. 1657, 8.*—*Nucula parva, Sow. C. I. no. 12. f. 7; Reeve, C. S. pl. 85. f. 7; Hanl. Biv. 169. pl. 19. f. 52.*—N. m., *Philip. Zeits. Mal. 1844. p. 101.*—L. m. and L. complanata, *Möller, Groenl. 17.*—*Nuculana m., Mörch, Prodr. Moll. Grönl. Greenland.*
- 63, 64. 15. L. BUCCATA, *Steenstrup in Möller Moll. Groenl. 17.*—*Nuculana b., Mörch, Prodr. Moll. Grönl. (name only). Greenland.*
- 65, 66. 22. L. PELLA.—*Arca p., Linn. Syst. Nat. (ed. 12.) 1141; Hanl. Ipsa Lin. Conc. 93.*—A. interrupta, *Poli, Test. Sic. ii. 136. pl. 25. f. 4, 5.*—*Nucula fabula, Sow. C. I. no. 18, f. 13; Reeve, C. S. pl. 85. f. 13; Hanl. Biv. 170. pl. 20. f. 6.*—N. emarginata, *Phil. (as of Lam.) Moll. Sic. i. p. 64. Mediterranean.*
67. 25. L. CHUVA, *Gray, Voy. Fly, 360, Marine Sh. pl. 2. f. 3. Moreton Bay, Australia; Hobarton, Tasmania.*
68. 36. L. POLITA.—*Nucula p., Sow. Z. P. 1832. p. 198; C. I. f. 11; Müller, Syn. 190; Desh. ed. Lam. vi. 507; Reeve, C. S. pl. 85. f. 11; Hanl. Biv. 169. pl. 19. f. 53. Panama.*
69. 27. L. CRASSA.—*Nucula c., Hinds, Z. P. 1843. p. 99. Australia.*
- 70–72. 29. L. ELENENSIS.—*Nucula E., Sow. Z. P. 1832. p. 198; C. I. f. 14; Müller, Syn. 191; Reeve, C. S. pl. 85. f. 14; Hanl. Biv. 169. pl. 19. f. 56.*—L. E., *D'Orb. Ann. MÉR. 545. Panama.*
73. 23. L. BICUSPIDATA.—*Nucula b., Gould, Proc. Bost. ii. and Bost. J. Nat. His. 5. p. 292. pl. 24. f. 8.*—N. Largillierii, *Philip. Zeits. Malak. 1851. p. 87.*—L. plicifera, *A. Adams, Z. P. 1856. p. 50. Gabon.*
74. 30. L. BELLULA, *A. Adams, Z. P. 1856. p. 49. Australia.*
- 75, 76. 18. L. LUGUBRIS, *A. Adams, Z. P. 1856. p. 49. Hab.?*
- 77, 78. 19. L. INCONSPICUA, *A. Adams, Z. P. 1856. p. 49. Australia.*
79. 28. L. GIBBOSA.—*Nucula g., Sow. Z. P. 1832. p. 198; C. I. f. 9; Müller, Syn. 191; Desh. ed. Lam. vi.*

- Fig. Sp. 508; *Reeve, C. S. pl. 85. f. 9*; *Hanl. Biv. 169. pl. 19. f. 55*.—*L. g., D'Orb. Am. MÉR. 545. Peru.*
- 80, 81. 45. L. COMMUTATA.—*Arca pella, Brug. (not Lin.) Vers. 109*.—*Nucula p., Lam. in part (not Museum types)*.—*N. c., Philip. Zeitsch. Mal. 1844. p. 101, for N. striata, Phil. Moll. Sic. i. 64. and N. minuta, ii. 46. Mediterranean.*
- 82, 83. 35. L. FASTIDIOSA, *A. Adams, Z. P. 1856. p. 49. N. Zcal.*
84. 24. L. ROSTRATA.—*Arca r., Mont. (not Chemn. Brug. Dillw.) Test. Brit. Suppl. 55. pl. 27. f. 7*; *Turt. Conch. Dict. 11*.—*Nucula r., Turt. (not Lam.) Dithyra Br. 178*; *Brown, Ill. Conch. B. 84. pl. 33. f. 16*; *Hanl. Biv. 168. pl. 20. f. 1*.—*N. Montagu, Gray, Ann. Philos. xxv. (1825)*.—*N. curvirostrum, Humphreys, MSS. in Sow. C. I. no. 7. f. 5*; *Reeve, C. S. pl. 85. f. 5*.—*N. recurva, Cour. J. Nat. Sc. Philadel. vi. pl. 11. f. 21*; *Hanl. Biv. p. 170. Guinea; Liberia. The A. rostrata of Montagu's predecessors is a synonym of pernula.*
85. 26. L. CONFUSA, *Hanl., for Nucula pella, Sowb. (not Arca p., Lin.) C. I. Nuc. f. 6, from which Reeve, C. S. pl. 85. f. 6. Japan. Chinese Seas.*
86. 37. L. NASUTA.—*Nucula n., Sow. C. I. no. 17. f. 12*; *Reeve, C. S. pl. 85. f. 12*; *Hanl. Biv. 170. pl. 19. f. 59 (not well). E. Indies.*
87. 13. L. TENUISULCATA.—*Nucula t., Coult. Bost. J. Nat. H. ii. 64, pl. 3. f. 8*; *Hanl. Biv. 377. pl. 20. f. 17*.—*N. minuta, Gould (not Fabric.) Mass. 101*; *Dekay, N. York Moll. 181. N. America.*
- 88, 89. 32. L. VENTRICOSA.—*Nucula v., Hinds, Z. P. 1843. p. 100*; *Sul. 64. pl. 18. f. 16. Straits of Malacca.*
90. 33. L. EBURNEA.—*Nucula e., Sow. Z. P. 1832. p. 198*; *C. I. f. 10*; *Müller, Syn. p. 191*; *Reeve, C. S. pl. 85. f. 10*; *Hanl. Biv. 169. pl. 19. f. 57*.—*N. lyrata, Hinds, Z. P. 1843. p. 100*; *Sul. 64. pl. 18. f. 12*.—*L. c., D'Orb. Am. MÉR. 546. Panama. Bay of Caracas.*
91. 34. L. FULGIDA, *A. Adams, Z. P. 1856. p. 50. Port Essington.*
- 92, 93. 40. L. CUNEATA.—*Nucula c., Sow. Z. P. 1832. p. 198*; *C. I. f. 15*; *Hanl. Biv. 169*; *Müller, Syn. p. 192*; *Reeve, C. S. pl. 85. f. 15*.—*Leda c., D'Orb. Am. MÉR. 546*.—*L. inornata, A. Adams, Z. P. 1856. p. 48 (from type). Valparaiso. N. Guinea! (Adams).*
94. 39. L. PUELLATA.—*Nucula p., Hinds, Z. P. 1843. p. 100*; *Sul. 64, pl. 18. f. 18. Malacca.*
- 95, 96. 42. L. CÆLATA.—*Nucula c., Hinds, Z. P. 1843. p. 99*; *Sul. 64. pl. 18. f. 13 (badly). California.*
- 97, 98. 41. L. ORNATA, *D'Orb. Am. MÉR. 546. pl. 82. f. 4-6. Payta, Peru.*

PLATE IV.

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|-----------|--|
| Fig. | Sp. |
| 99. | 38. L. MAURITIANA.— <i>Nucula</i> m., <i>Sow. C. I.</i> no. 22. f. 17; <i>Reeve, C. S.</i> pl. 85. f. 17; <i>Hanl. Biv.</i> 170. Ceylon, China, Mauritius. |
| 100. | 43. L. MICANS, <i>Adams, MSS. in coll. Cuming.</i> N. Zealand. |
| 101. | 44. L. CONRADI, <i>Hanl. Z. P.</i> 1860. Hab.? |
| 102. | 51. L. HINDSII, <i>Hanl.</i> — <i>N. crispa</i> (in part), <i>Hinds, Z. P.</i> 1843. p. 100. Gulf of Nicoya? |
| 103. | 46. L. RETICULATA.— <i>Nucula</i> r., <i>Hinds, Z. P.</i> 1843. p. 100; <i>Hanl. Biv.</i> 377. pl. 19. f. 48. Philippines. |
| 104, 105. | 52. L. EXCAVATA.— <i>Nucula</i> c., <i>Hinds, Z. P.</i> 1843. p. 100; <i>Sul.</i> 64. pl. 18. f. 17. Panama. |
| 106. | 47. L. BROOKEI, <i>Hanl. Z. P.</i> 1860. Borneo. |
| 107, 108. | 50. L. CRISPA.— <i>Nucula</i> c., <i>Hinds, Z. P.</i> 1843. p. 100; <i>Sul.</i> 64. pl. 18. f. 14. Gulf of Nicoya. |
| 109–111. | 1. N. DECUSSATA, <i>Sow. C. I.</i> no. 27. f. 18; <i>Hanl. Biv.</i> 171. pl. 20. f. 8; <i>Forbes and Hanl. Brit. Moll.</i> ii. 221. pl. 47. f. 1–3.—N. Polii, <i>Philip. Mol. Sic.</i> i. 63. pl. 5. f. 10.—N. sulcata, <i>Philip. (as of Bronn) Moll. Sic.</i> ii. p. 45. Britain. Mediterranean. |
| 112, 113. | 28. N. CONVEXA, <i>Sow. C. I.</i> no. 32. f. 22; <i>Hanl. Biv.</i> 172. pl. 20. f. 11.—N. tumida, <i>Hinds, Z. P.</i> 1843. p. 98; <i>Sul.</i> 63. pl. 18. f. 6 (young).—N. margaritacea, <i>A. Adams, Z. P.</i> 1856. p. 51. China (<i>Humphreys</i>). Straits of Malacca (<i>Hinds</i>). |
| 114. | 19. N. MIRABILIS, <i>Adams and Reeve, Zool. Samarang, Moll.</i> 75. pl. 21. f. 8. Japan. |
| 115, 116. | 34. N. INFLATA, <i>Hancock, Ann. Nat. H.</i> 1846. (Nov.) p. 333. pl. 5. f. 13, 14.—N. tenuis, <i>Möller, Moll. Groenl. (from type)</i> .—N. obliquata, <i>Beck, teste Mörch.</i> Arctic Seas. |
| 117. | 24. N. CUMINGII, <i>Hinds, Z. P.</i> 1843. p. 97; <i>Sul.</i> 62. pl. 18. f. 1. Indian Archipelago. |
| 118, 119. | 8. N. PROXIMA, <i>Say, Journ. N. S. Philad.</i> ii. 270; <i>Conr. Amer. Mar. Conch.</i> pl. 6. f. 2; <i>Gould. Mas.</i> 103. f. 63; <i>Hanl. Biv.</i> 172. pl. 20. f. 5; <i>Dekay, N. York Moll.</i> 179. pl. 12. f. 215.—FRY? N. radiata, <i>Dekay, New York Moll.</i> 179. pl. 12. f. 215. N. America. |
| 120. | 7. N. NITIDA, <i>Sow. C. I.</i> no. 29. f. 10; <i>Hanl. Biv.</i> 171. pl. 19. f. 44; <i>Forbes and Hanl. Brit. Moll.</i> ii. 218. pl. 47. f. 9. Britain, etc. |
| 121, 122. | 2. N. NUCLEUS.— <i>Arca</i> n., <i>Linn. Syn. Nat. ed.</i> 12. p. 1143. in part; <i>Donov. Brit. Shells</i> , ii. pl. 63: side figs.— <i>Glycimeris argentea</i> , <i>Da Costa, Brit. Con.</i> 170, in part, pl. 15. f. 6, on the right.—N. margaritacea, <i>Lam. chiefly; Brown, Ill. Conch. G. B.</i> 85. pl. 33. f. 12; <i>Philip. Moll. Sic.</i> i. 64; ii. 45.—N. n., var. B., <i>Loven, Ind. Moll. Skandin.</i> —N. n., <i>Forbes and Hanl. Brit. Moll.</i> ii. 215. pl. 47. f. 7, 8. Britain. Europe. |
| 123, 124. | 4. N. RADIATA.— <i>Arca</i> nucleus, <i>Turt. Conch. Dict.</i> 8. |

- Fig. Sp.
- f. 1, 2.*—*N. n.*, *Turt. Dith. Brit.* 176. *pl.* 13. *f.* 9; *Brit. Mar. Conch.* 105. *f.* 74.—*N. nuclea*, *Flem. Brit. Anim.* 401.—*N. margaritacea*, *Sow. Gen.* *f.* 7; *Conch. Man.* *f.* 137.—*N. r.*, *Forbes and Hanl. Brit. Moll.* *p.* 220. *pl.* 47. *f.* 4, 5; *pl.* 48. *f.* 7. Britain. S. Europe.
125. 26. *N. STRANGEI*, *A. Adams, Z. P.* 1856. *p.* 52. N. Zeal.
126. 25. *N. GRAYI*, *D'Orb. Am. MÉR.* 625 (*from type*) for *N. obliqua*, *Sow. (not Lam.)*, *C. I. f.* 21. N. o., *Hanl. Biv.* 171. *pl.* 20. *f.* 9. Chili.
127. 12. *N. SULCATA*, *Adams, Z. P.* 1856. *p.* 53. N. Zealand.
128. 35. *N. BELLOTII*, *A. Adams, Z. P.* 1856. *p.* 51.—*N. expansa*, *Reeve, in Belcher's Last Arct. Voy.* 397. *pl.* 33. *f.* 2. Arctic Ocean.
129. 3. *N. STRIOLATA*, *A. Adams, Z. P.* 1856. *p.* 52. Chinese Seas.
130. 5. *N. CASTANEA*, *A. Adams, Z. P.* 1856. *p.* 53. N. Zealand.
- 131, 132. 9. *N. PAULULA*, *A. Adams, Z. P.* 1856. *p.* 52. Japan.
133. 14. *N. PISUM*, *Sow. Z. P.* 1832. *p.* 198; *C. I. f.* 23; *Müller, Syn.* 191; *Hanl. Biv.* 172. *pl.* 20. *f.* 12.—*N. semionata*, *D'Orb. Am.* 624. *pl.* 84. *f.* 27–29 (*probably*). Valparaiso. Chili.
- 134, 135. 16. *N. CRENULATA*, *A. Adams, Z. P.* 1860. *p.* 52. Guadeloupe.
136. 17. *N. EXIGUA*, *Sow. Z. P.* 1832. *p.* 198; *C. I. f.* 23, 24; *Müller, Syn.* 192; *Hanl. Biv.* 172. *pl.* 20. *f.* 13; *D'Orb. Am. MÉR.* 625. Bay of Caracas. W. Columbia.
137. 27. *N. SIMPLEX*, *A. Adams, Z. P.* 1856. *p.* 52. Sydney.
- 138, 139. 36. *N. DELPHINODONTA*, *Mighels, Bost. J. Nat. H.* iv. 40. *pl.* 4. *f.* 5; *Proc. Bost. i.*; *Hanl. Biv.* 377. *pl.* 20. *f.* 16. N. America.
- 140, 141. 33. *N. TENUIS*.—*Arca t.*, *Mont. Test. Brit. Suppl.* 56. *pl.* 29. *f.* 1; *Turt. Conch. Dict.* 11.—*N. t.*, *Turt. Dith. Brit.* 177; *Forbes and Hanl. Brit. Moll.* ii. 223. *pl.* 47. *f.* 6. Britain. W. Europe.
142. 6. *N. NITIDULA*, *A. Adams, Z. P.* 1856. *p.* 51. N. Zeal.
143. 32. *N. M'ANDRÆI*, *Hanl. Z. P.* 1860. Tunis.

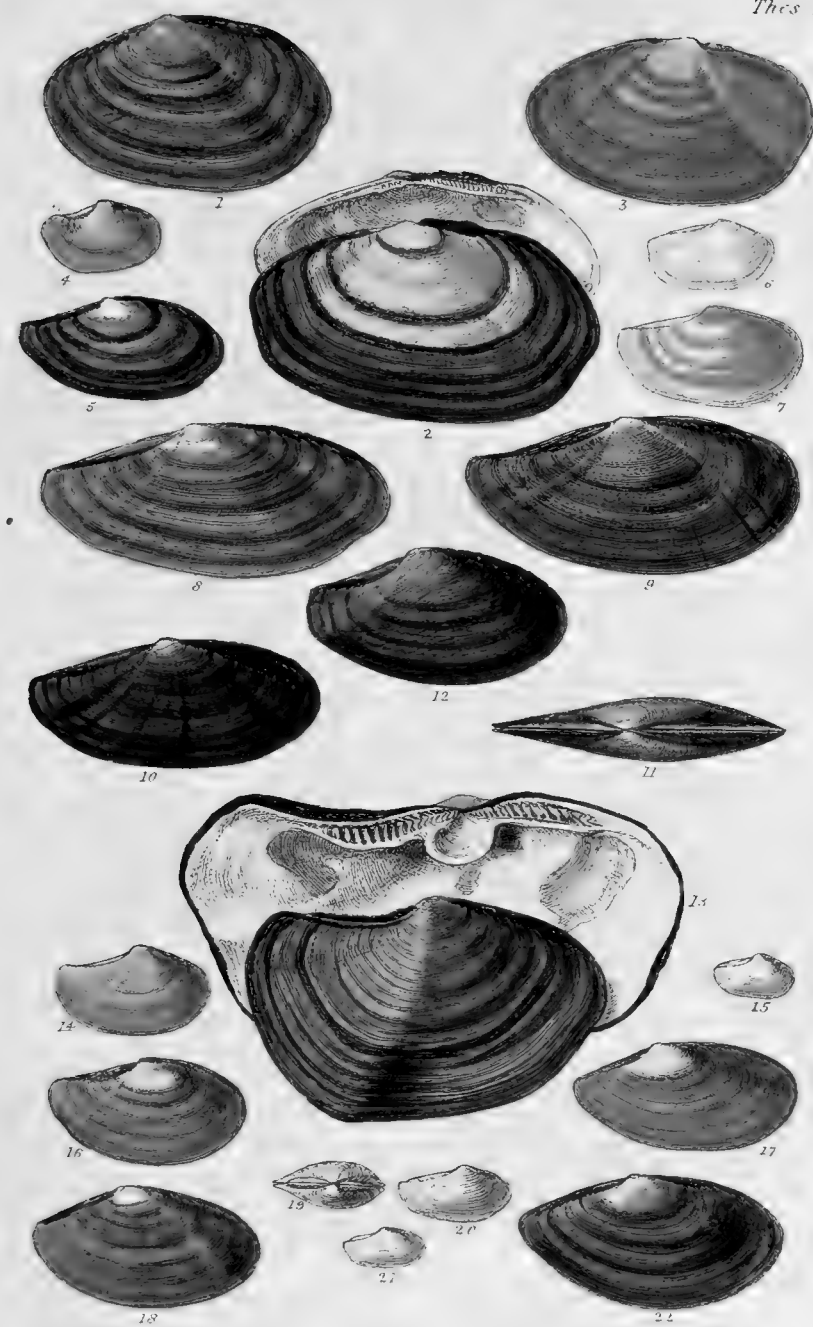
PLATE V.

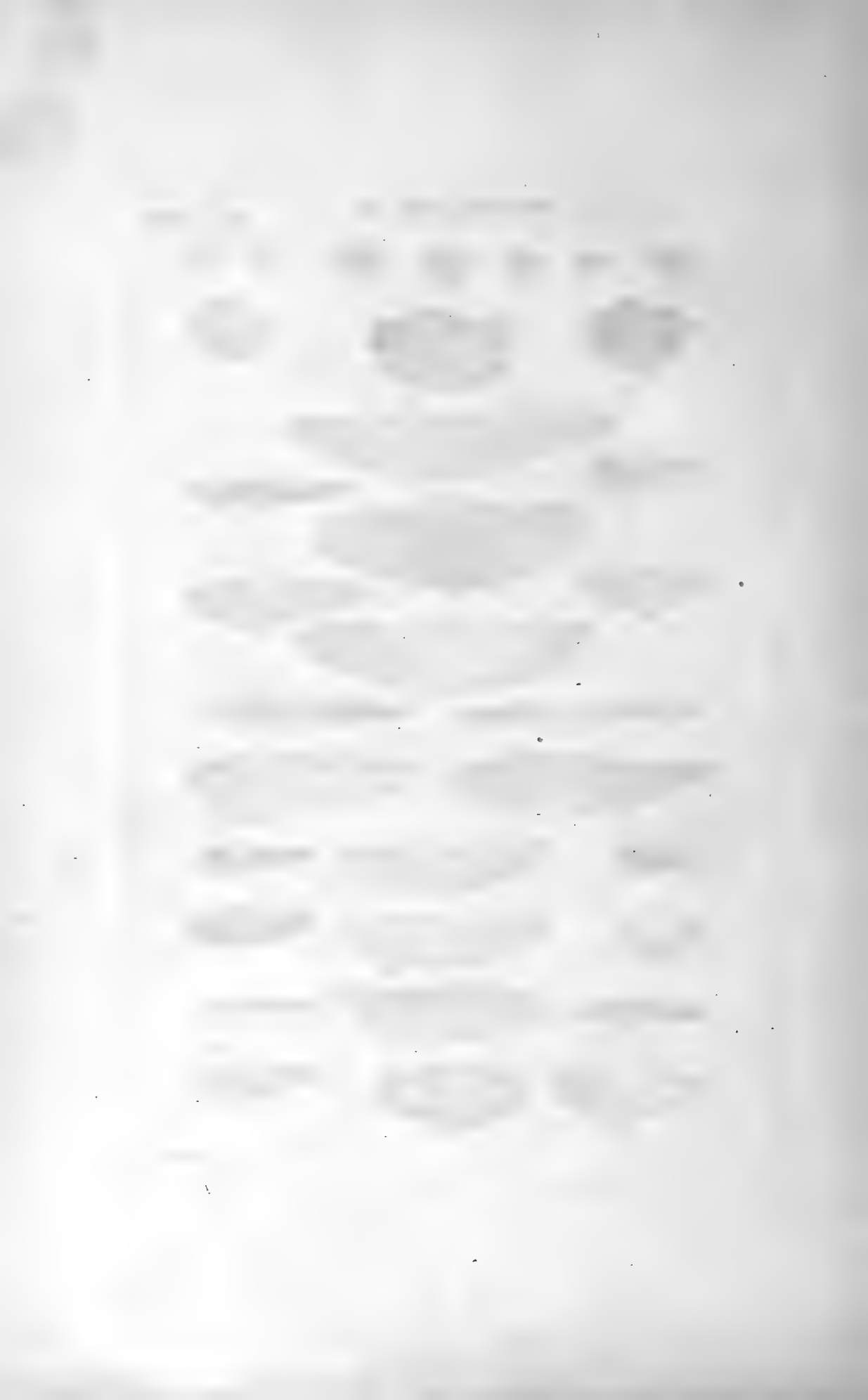
144. 10. *N. MITRALIS*, *Hinds, Z. P.* 1843. *p.* 97; *Sul.* 62. *pl.* 18. *f.* 2.—*N. gibba*, *A. Adams, Z. P.* 1856. *p.* 52. Straits of Malacca (*Hinds*). Australia (*Strange*).
145. 11. *N. MARMOREA*, *Hinds, Z. P.* 1843. *p.* 98; *Sul.* 63. *pl.* 18. *f.* 7. Straits of Malacca.
146. 13. *N. PULCHRA*, *Hinds, Z. P.* 1843. *p.* 97; *Sul.* 62. *pl.* 18. *f.* 3. L'Agulhas Bank, Cape G. Hope, 70 fath.
147. 15. *N. DECLIVIS*, *Hinds, Z. P.* 1843. *p.* 98; *Sul.* 63. *pl.* 18. *f.* 8. Hab.?

- Fig. Sp.
148. 18. *N. CASTRENSIS*, *Hinds*, *Z. P.* 1843. *p.* 98; *Sul.* 63. *pl.* 18. *f.* 5; *Middend. Malac.* Ross. iii. 28. Sitka, N. W. America.
149. 22. *N. PUELCHA*, *D'Orb. Am. MÉR.* 624. *pl.* 84. *f.* 24-6. San Blas, N. Patagonia.
150. 23. *N. OBLIQUA*, *Lam. Anim. s. Vert.* vi. *pt.* 1. *p.* 59, *teste Chenu, Manuel Conch.* ii. *f.* . Australia.
151. 20. *N. DIVARICATA*, *Hinds*, *Z. P.* 1843. *p.* 97; *Sul.* 62. *pl.* 18. *f.* 4. Chinese Seas, in 84 fathoms.
152. 21. *N. MALABARICA*, *Hanl. Z. P.* 1860. Cochin, Malabar.
153. 30. *N. LAYARDI*, *A. Adams*, *Z. P.* 1856. *p.* 51. Ceylon.
154. 31. *N. ÆGEENSIS*, *Forbes, Report Brit. Assoc.* 1843. *p.* 192. Macri and Crete, in deep water.
155. 29. *N. ANTIPODUM*, *Hanl. Z. P.* 1860. Australia (Mus. Taylor and Hanley).
156. (p. 59) "N. NANA, *Hinds*;" (supposed type) = *delphinodonta*.
- 157, 158. (p. 62) *N. CORTICATA* (types in Brit. Mus.), *Möller, Groenl. Moll.* *p.* 17. Greenland.
159. 2. *N. NUCLEUS*, *Linn.*—Variety.
- 160, 161. 16. *N. PAYTENSIS*, *A. Adams*, *Z. P.* 1856. *p.* 51.
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163. (p. 37) *L. (Y.) OBESA*, *Stimpson, Shells N. England*, *p.* 10. *pl.* 2. *f.* 1 (as *Leda o.*).
164. 64. *L. (Y.) EIGHTSH.*—*Nucula E., Couth. MSS. in Jay Cat. Shells*, *pl.* 1. *f.* 12, 13; *Hanl. Biv.* 169. *pl.* 20. *f.* 2. S. Shetland Isles.
- 165, 166. 73. *L. SULCIFERA*.—*Nucula s., Reeve in Belcher's Last Arct. Voy.* 397. *pl.* 33. *f.* 1.
167. 72. *L. (P.) ABYSSICOLA*.—*Yoldia a., Torell, Spitzber. Moll.* 149. *pl.* 1. *f.* 4. Spitzbergen.
- 168, 169. 67. *L. (Y.) FRIGIDA*.—*Yoldia f., Torell, Spitz. Moll.* 148. *pl.* 1. *f.* 3. Spitzbergen.
170. 48. *L. VITREA*, *D'Orb. Moll. Cuba*, i. 262. *pl.* 26. *f.* 27-9. W. Indies.
171. 31. *L. FRAGILIS*.—*Arca f., Chemn. Conch.* vii. 165. *f.* 546, *from which A. pella, Gmel. (not Linn.)* 3307.—*Nucula striata*, *Sow. C. I. n.* 21. *f.* 16 (not *striata* of *Phil. or King*); *Reeve, C. S.* *pl.* 85. *f.* 16; *Hanl. Biv.* 170. *pl.* 19. *f.* 60. China.
172. 42. *L. CÆLATA*, VAR., *Hinds*.
173. 49. *L. JAMAICENSIS*, *D'Orb. Moll. Cub.* 263. *pl.* 24. *f.* 30-2. W. Indies. 6/
174. 15. *L. BUCCATA*, VAR., *Steenstrup*.
175. (p. 63) *L. RECTA*.—*Nucula r., Hinds*, *Z. P.* 1843. *p.* 100; *Sul.* 64. *pl.* 18. *f.* 15.
176. (p. 62) *L. EBOREA*.—*Nucula e., Cour. Proc. Philadelph.* iii. 24. *pl.* 1. *f.* 4. Florida.
177. (p. 25) *L. SULCULATA*, *Couthouy, MS. in Gould's Zool. U. S. Explor. Exped.* 425. *f.* 539.

NUCULIDÆ I,

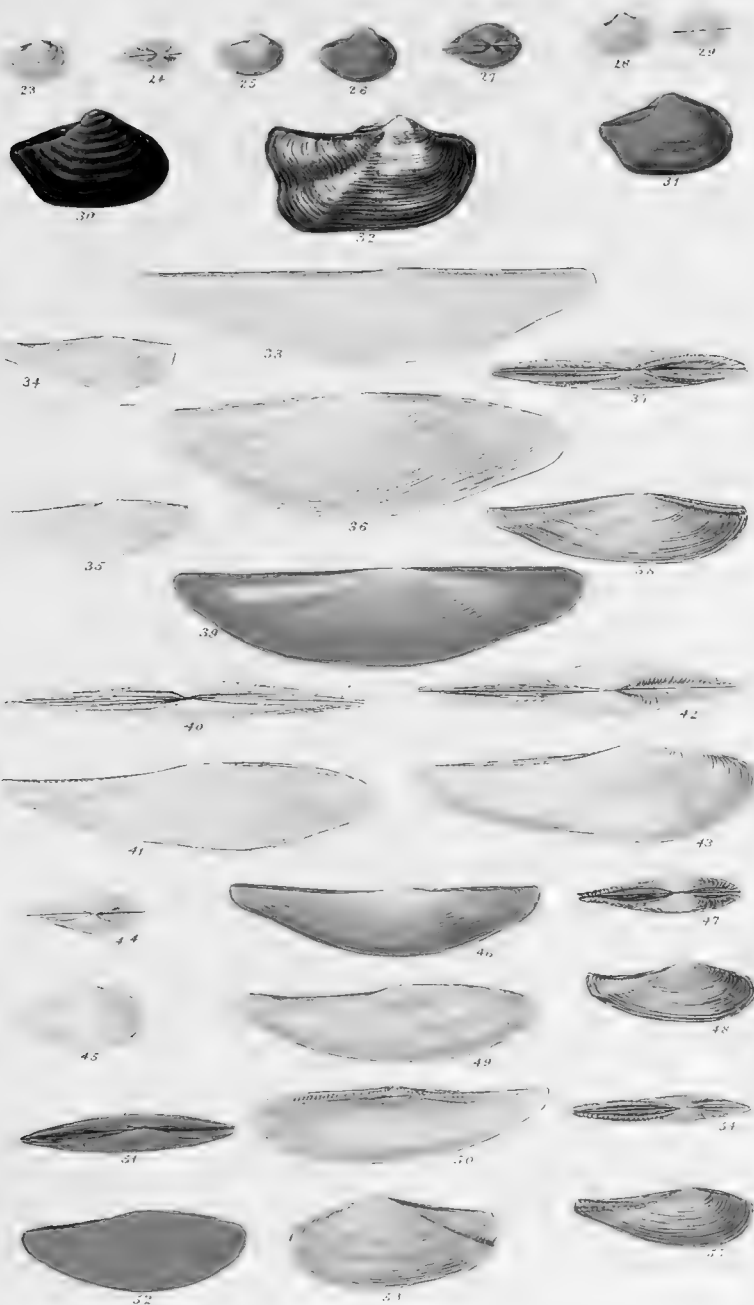
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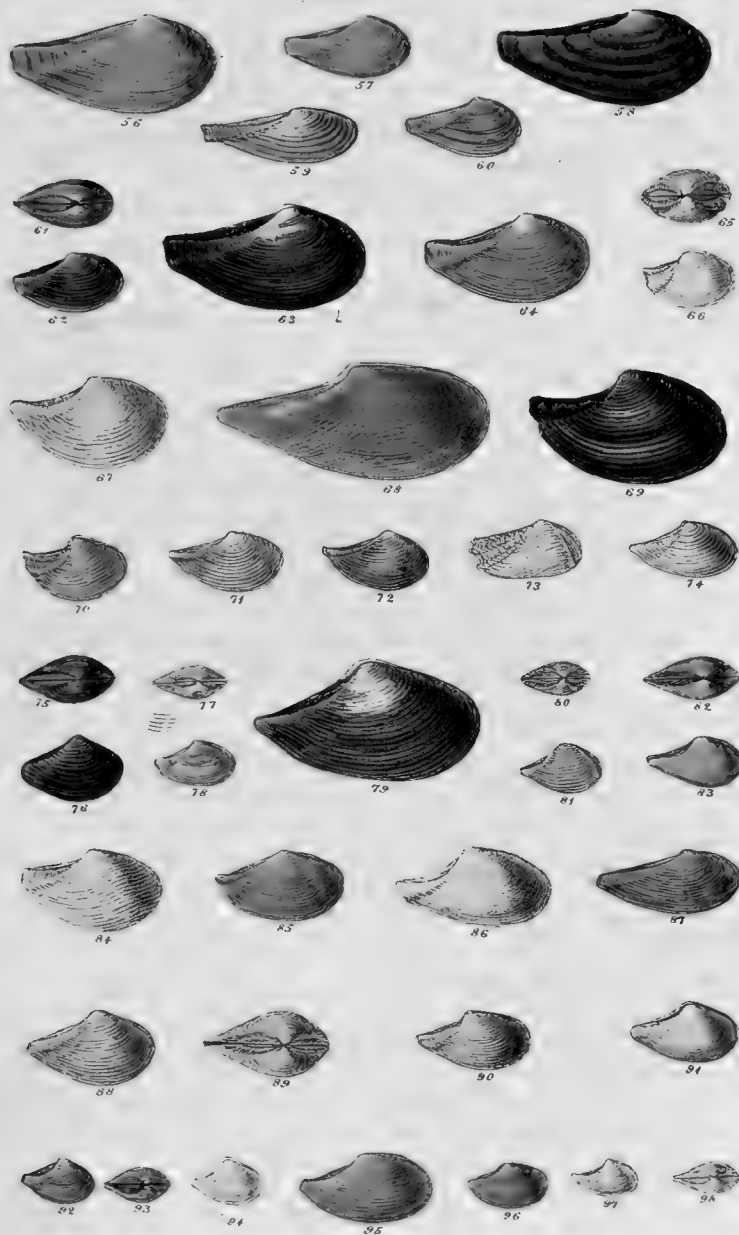
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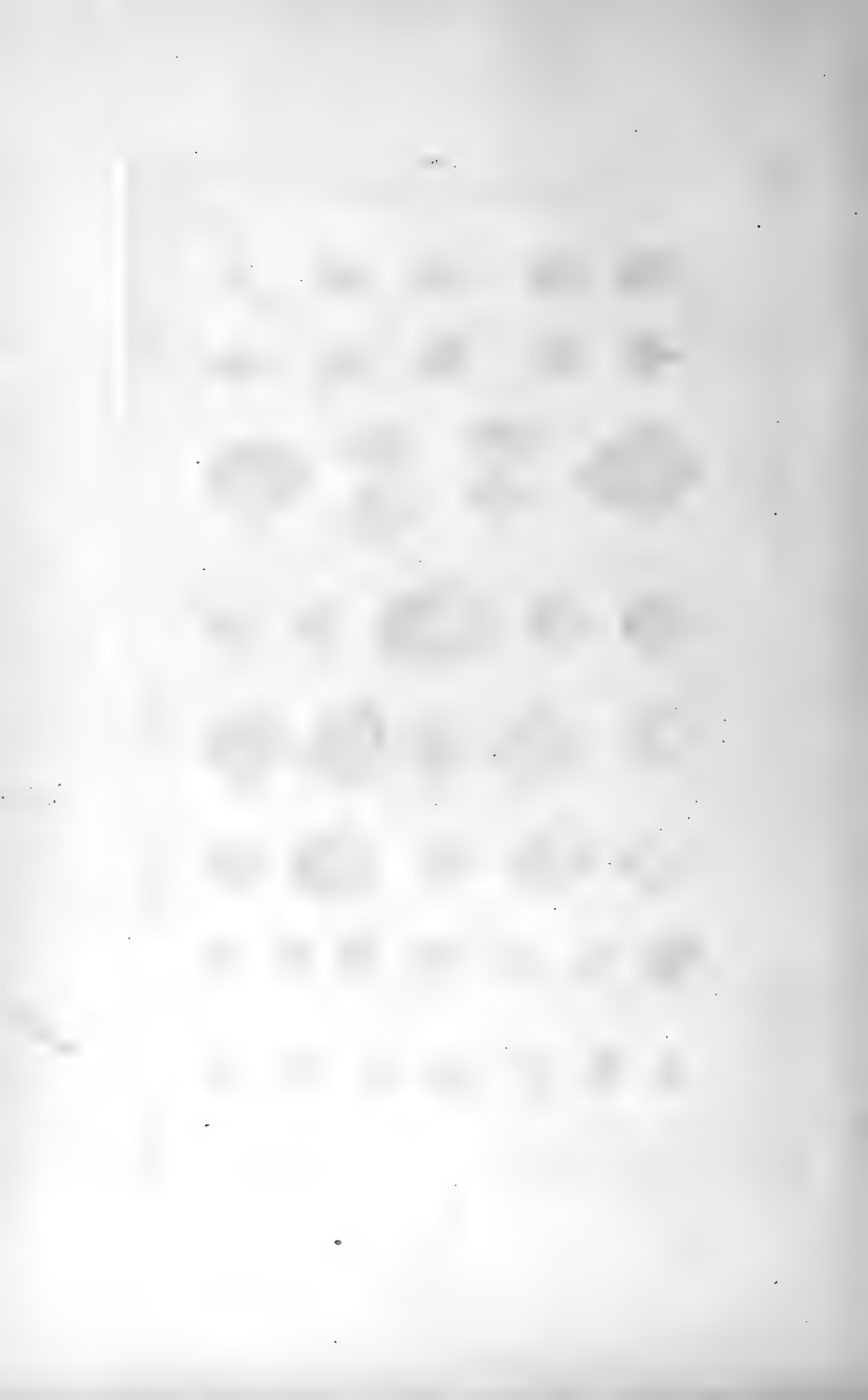




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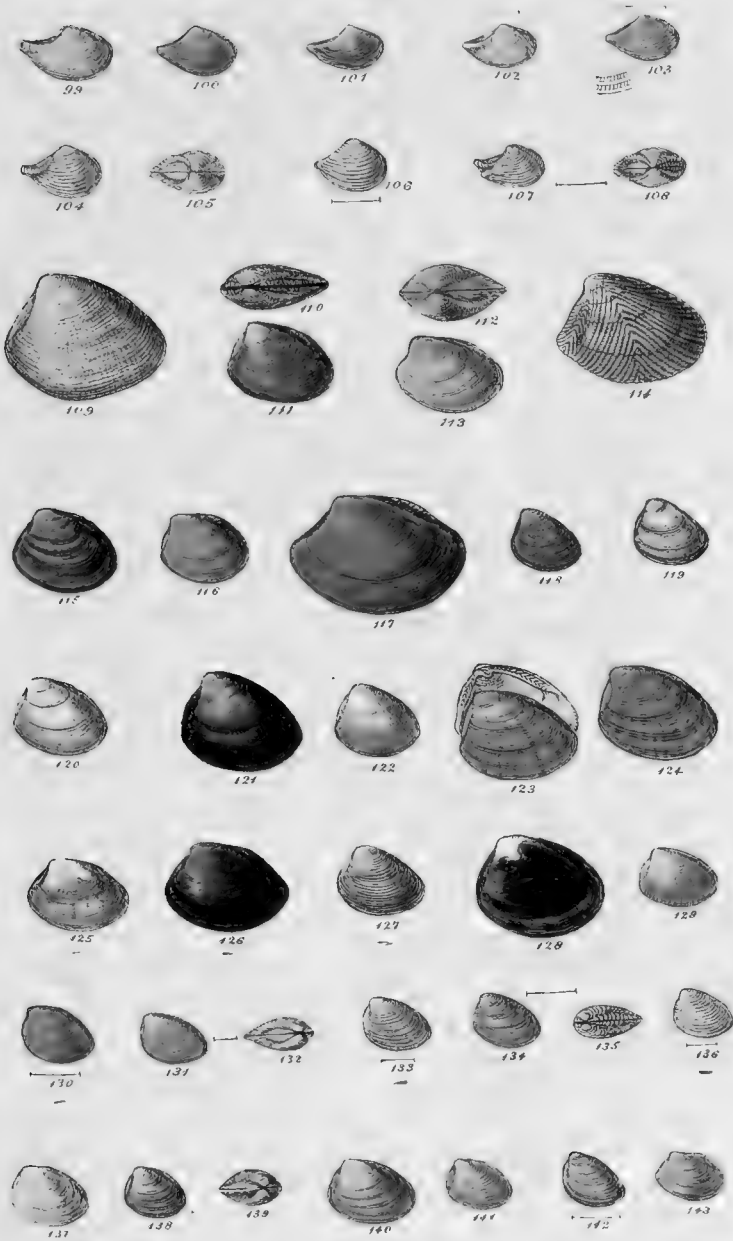
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NUCULIDÆ IV.

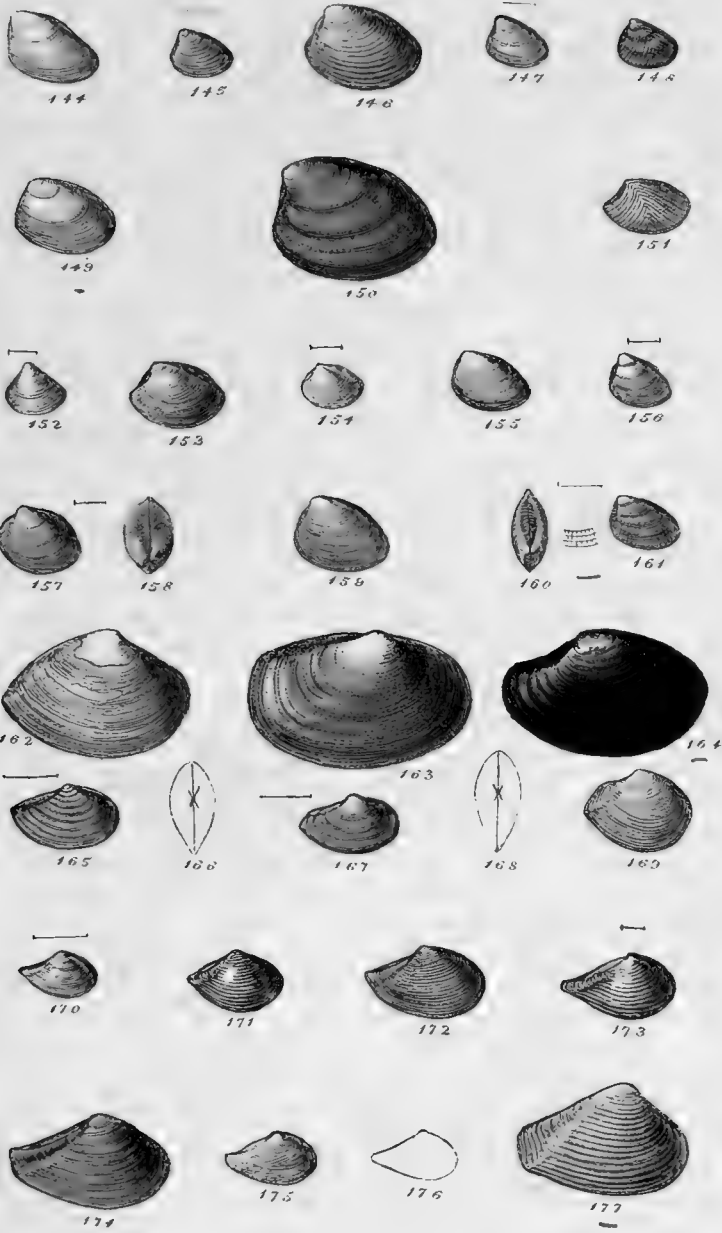
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NUCULIDÆ V.

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